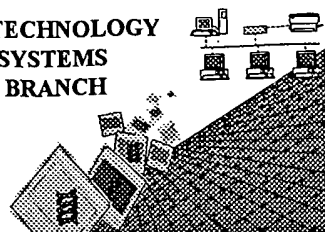


BIOTECHNOLOGY
SYSTEMS
BRANCH



RAW SEQUENCE LISTING
ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/892,635
Source: OIP
Date Processed by STIC: 3/20/2003

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FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

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Revised 01/29/2002



OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

3 <110> APPLICANT: MAY, Gregory D.
 4 CLENDENNEN, Stephanie K.
 5 MASON, Hugh S.
 6 GOMEZ LIM, Miguel A.
 7 ARNTZEN, Charles J.
 9 <120> TITLE OF INVENTION: DNA Regulatory Elements Associated with Fruit Development
 11 <130> FILE REFERENCE: 031998-007
 13 <140> CURRENT APPLICATION NUMBER: US/09/892,635
 14 <141> CURRENT FILING DATE: 2001-06-28
 16 <150> PRIOR APPLICATION NUMBER: US 09/160,351
 17 <151> PRIOR FILING DATE: 1998-09-25
 19 <150> PRIOR APPLICATION NUMBER: US 60/060,062
 20 <151> PRIOR FILING DATE: 1997-09-25
 22 <160> NUMBER OF SEQ ID NOS: 45
 24 <170> SOFTWARE: PatentIn version 2.0

Does Not Comply
Corrected Diskette Needed

error throughout

*Per Sequence Rules,
only one file
is to be
submitted
on disk*

ERRORED SEQUENCES

2135 <210> SEQ ID NO: 24
 2136 <211> LENGTH: 2326
 2137 <212> TYPE: PRT
 2138 <213> ORGANISM: Musa acuminata
 2140 <400> SEQUENCE: 24
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 2142 1 5 10 15
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 2145 20 25 30
 2147 Gln Arg Leu Ala Ser Ala Ile Ser His Ile His Leu Ile Trp Ser Ile
 2148 35 40 45
 2150 Gly Ser Phe Thr Ala Gly Arg Asn Pro Phe Leu Tyr Ile Ser Thr Thr
 2151 50 55 60
 2153 Asn Ala Glu Gly Lys Pro Gly Gly Leu Ser Ala Pro Ala Gly Cys Ala
 2154 65 70 75 80
 2156 Val Ala Ser Thr Ala Gly Ala Val Thr Arg Ile His Thr Ala Ala Lys
 2157 85 90 95
 2159 Asp Ala Arg Ala Asn Ala Ala Val Ala Ala Val Ala Ala Val Ala Ala
 2162 100 105 110
 2164 Trp Pro Arg Ser Ser Ala Pro Pro Ser Ser Ser Arg Cys Ser Ile Ala
 2165 115 120 125
 2167 Thr Thr Gln Pro Ala Pro Ala Arg Val Ser Thr Arg Thr Thr Pro Ser
 2168 130 135 140
 2170 Ser Pro Pro Pro Thr Pro Ser Ala Gly Ser Gly Arg Pro Ala Thr Thr

pp 1-9

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

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2171 145          150          155          160
E--> 2173 Gln Glu Glu Xaa Gly Asp Arg Gly Phe Leu Gly Ala Xaa Val Ser Arg
2174          165          170          175
E--> 2176 Xaa Asp Arg Phe Xaa His Leu Pro Lys Leu Val Asn Cys Leu Trp Asp
2177          180          185          190
E--> 2179 Xaa Lys Leu Asn Val Trp Gly Leu Ala Gly Gly Xaa Ala Thr Arg Pro
2180          195          200          205
E--> 2182 Met Val Arg Thr Pro Trp Val Thr Ala Ser Ser Xaa Asn Lys Thr Leu
2183          210          215          220
E--> 2185 Ile Gly Xaa Leu Arg Pro Xaa Ser Xaa Trp Pro Cys Ala Ala Lys
2186 225          230          235          240
E--> 2188 Asn Thr Thr Ala Glu Ala Xaa Pro Asn Phe Xaa Val Ser Xaa Ile Leu
2189          245          250          255
E--> 2191 Thr Val Xaa Arg Arg Asp Arg Val His Asn Asp Ala Xaa Ser Asn Ala
2192          260          265          270
E--> 2194 Thr Ile Arg Cys Val Xaa Arg Ala Ala Xaa Thr Xaa Thr Gly Arg Pro
2195          275          280          285
E--> 2197 Gly Glu Pro Ser Val Xaa Thr Xaa Ser Thr Thr Gln Thr Trp Trp Pro
2198          290          295          300
E--> 2200 Xaa Thr Arg Pro Ser Xaa Ser Arg Arg Xaa Cys Gly Phe Gly Leu Xaa
2201 305          310          315          320
E--> 2203 Ser Arg Pro Ser Arg Xaa Ala Thr Thr Pro Gly Ala Gly Arg His Pro
2204          325          330          335
2206 Thr Pro Thr Arg Arg Pro Glu Gly Phe Arg Ala Thr Val Ser Pro Pro
2207          340          345          350
2209 Thr Ser Ser Met Glu Gly Trp Ser Ala Gly Lys Gly Thr Met Pro Gly
2210          355          360          365
2212 Trp Arg Ile Gly Ser Ala Ser Thr Arg Gly Thr Ala Thr Cys Trp Gly
2213          370          375          380
2215 Ala Thr Glu Thr Thr Trp Thr Ala Thr Thr Arg Asp Pro Leu Leu Leu
2216 385          390          395          400
2218 Gln Gln Leu Gln Pro His Ser Ser Gly Glu Leu Trp Arg Gln Leu Gly
2219          405          410          415
2222 Val Leu Gln Pro Glu Thr Leu Tyr Leu Val Arg Tyr Tyr Cys Asp Glu
2223          420          425          430
2225 Ser Met Arg Asn Lys Arg Tyr Tyr Asp Ser Asp Ser Val Ser Leu Lys
2226          435          440          445
E--> 2228 Leu Arg Arg Lys Ser Ser Ile Lys Ala Xaa Leu His Thr Trp Pro Thr
2229          450          455          460
2231 Thr Ile Val Asp Arg Asp His Met His Pro Ser Asn Val Leu Lys Cys
2232 465          470          475          480
2234 Leu Gly Val Ser Lys Cys Val Phe Asp Arg Asn Glu Asp Val Arg Ile
2235          485          490          495
2237 Asn Lys Ile Asn Tyr Phe Phe Ile Ile Ile Asn Ile Leu Ile Tyr Phe
2238          500          505          510
2240 Leu Ile Leu Lys Ile Leu Lys Ile Leu Gly Phe Tyr Ile Trp Ile Gly
2241          515          520          525
2243 Ile Leu Arg Ile Phe Asn Tyr Lys Asn Tyr Thr Phe Ser Arg Ser Asn
2244          530          535          540

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RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

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2246 Tyr Lys Tyr Phe Leu Tyr Gly Leu Gly Tyr Leu Asp Leu Leu Ile Lys
2247 545 550 555 560
2249 Ile Leu Ile Lys Phe Ile Lys Leu Lys Tyr Lys Tyr Leu Asn Ile Thr
2250 565 570 575
2252 Val Ile Met Arg Ser Arg Thr Leu Arg Ser Asp Arg Gly Glu Lys Gly
2253 580 585 590
2255 Asn Tyr Val Asn His Gly Lys Phe Arg Phe Val Cys Thr Val Glu Met
2256 595 600 605
2258 Val Thr Val Asp Thr His Pro Gln Pro Ala Cys Asn Asn His Val Val
2259 610 615 620
2261 Ile Cys Leu Val Ser Tyr Leu Met Thr Met Asn His Ile Val Phe Thr
2262 625 630 635 640
E--> 2264 Asn Ile Asn Ala Ser Leu Ala Ser Gln Phe Cys Thr Phe Val Pro Xaa
2265 645 650 655
2267 Leu Lys Cys Ser Tyr Gly Leu Thr His Pro Glu Cys Met Val Ser Arg
2268 660 665 670
E--> 2270 Xaa Leu Glu Arg Val Asn Pro Arg Ser Ser Gly Ala Thr Leu Xaa Ser
2271 675 680 685
2273 Ala Glu Val Glu Asp His Ser Phe Ser Tyr Pro Leu Gly Ala Tyr Ile
2274 690 695 700
E--> 2276 Lys Val Glu Ile Met Arg Gly Ile Xaa Asn Ser Thr Tyr Ser Ile Phe
2277 705 710 715 720
2279 Glu Leu Ala Arg Val Gly Val Thr Cys Met Arg Phe Asp Pro Gln Cys
2282 725 730 735
2284 Ser Ser Trp Gly Arg Phe Tyr Thr Tyr Ser Cys Met Ser Tyr Ile Val
2285 740 745 750
2287 Ala Leu Ile Ile Phe Ser His His Arg Thr Leu Gly Ala Cys Ile Val
2288 755 760 765
E--> 2290 Phe Thr Arg Phe Asn Xaa Val Arg His Cys Phe Leu Pro Thr Met Trp
2291 770 775 780
2293 Pro Asn Thr Leu Tyr Cys Leu Ile Arg Pro Arg Ala Lys Arg Val Gln
2294 785 790 795 800
2296 Arg Asn Cys Val Lys Trp Leu Ala Gly Leu Gly Leu Met Ala Leu Ser
2297 805 810 815
2299 Trp Leu Asp Thr Thr His Arg Leu Arg Asp Thr Met Pro Ser Leu Leu
2300 820 825 830
2302 Trp Leu Thr Cys His Val Gly Trp Met Pro Lys Tyr Ala Ile Ser Phe
2303 835 840 845
2305 Ser Pro Tyr Lys Gly Val Val Pro Glu Asn Arg Gly His Gly Leu Gly
2306 850 855 860
2308 Ser Val Val Gly Pro Cys Ser Pro Gln Leu Gly Gly Leu Leu His Gln
2309 865 870 875 880
E--> 2311 Val Gly Xaa Leu Leu Ala Gly Gln Ser Thr Leu Gly Arg Asp Gly Arg
2312 885 890 895
E--> 2314 Asp Lys Xaa Lys Glu Gly Trp Leu Arg Leu Gly Phe Arg Gln Ser Ile
2315 900 905 910
2317 Val Tyr Glu Ala Asn Gly Ile Pro Pro Leu Gly Cys Leu Leu Val Ser
2318 915 920 925
2320 Ile Cys Cys Asp Gly Leu Phe Val Val Gly Gly Leu Val Arg Leu Leu

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Same
error

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
 TIME: 11:22:24

Input Set : A:\pto.amc.txt
 Output Set: N:\CRF4\03202003\I892635.raw

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      2321      930      935      940
E--> 2323 Leu Ser Arg Glu Lys Val Phe Xaa Lys Glu Phe Asn Leu Thr Met Leu
      2324 945      950      955      960
      2326 Lys Ile Lys Gly Leu Ala Lys Lys Phe Gly Ser Thr Val Leu Lys Pro
      2327      965      970      975
      2329 Glu Asn Val Tyr Val Glu Val Tyr Ser Thr Met Trp Lys Leu Glu Asn
      2330      980      985      990
      2332 Ala Pro Ile Val Arg Phe Gly Leu Leu Thr Phe Lys Ala Glu Gly Tyr
      2333      995      1000      1005
      2335 Thr Cys Tyr Glu Val Cys Ser Thr Met Trp Lys Gln Ser Asn Ala Leu
      2336      1010      1015      1020
E--> 2338 Ala Met Arg Phe Gly Leu Thr Tyr Ser Thr Met Asp Ala Xaa Lys Glu
      2339 1025      1030      1035      1040
E--> 2342 Gly Thr Xaa Gln Asp Leu Val Gly Lys Asp Ser Ile Leu Ala Arg Gln
      2343      1045      1050      1055
      2345 Met Pro Ile Gly Asn Gly Leu Thr Glu Thr Ser Thr Lys Thr Ser Asp
      2346      1060      1065      1070
      2348 Leu Val Gly Asn Gly Cys Leu Val Arg Lys Asp Gly Ser Arg Leu Ile
      2349      1075      1080      1085
      2351 Lys Ile Lys Leu Ile Ile Tyr Gln Thr Leu Asn Gly Arg Ile Val Arg
      2352      1090      1095      1100
      2354 Lys Asp Gly Ser Arg Leu Ile Lys Ile Lys Leu Ile Val Tyr Gln Thr
      2355 1105      1110      1115      1120
      2357 Leu Ile Thr Leu Asp Lys Arg Gly Thr Met Tyr Asn Trp Glu Ala Gln
      2358      1125      1130      1135
      2360 Ile Leu Phe Pro Asn Thr Phe Leu Leu Lys Pro Phe Ala Thr Ile Ala
      2361      1140      1145      1150
E--> 2363 Ile Leu Ile Tyr Phe Phe Tyr Ile Ile Ile Xaa His Ser Tyr Met Arg
      2364      1155      1160      1165
E--> 2366 Tyr Asp Ile Asn Leu Arg Pro Ala Leu Val Asn Xaa Leu Ile Xaa Val
      2367      1170      1175      1180
      2369 Thr Pro Glu Ala Ile Ile Leu Thr Leu Thr Trp Arg Thr Leu Val Gly
      2370 1185      1190      1195      1200
E--> 2372 Pro Xaa Ile Xaa Met Glu Val Asp Lys His Asp Asp Asp Gly Tyr Met
      2373      1205      1210      1215
      2375 Phe Met Cys Leu Ser Lys Ser Ile Lys Leu Glu Ser Asn Lys Thr Ile
      2376      1220      1225      1230
      2378 Lys Val Gly Arg Pro Leu Ser Ser Met Ser Arg Ser Ser Thr Phe Gln
      2379      1235      1240      1245
      2381 His Arg Ala Glu Arg Ser Tyr Leu Thr Leu Thr Cys Pro Ser Gly Arg
      2382      1250      1255      1260
      2384 Arg His Arg Leu Ala Glu Thr Lys Gly Gln Ser Pro Asn Ser His Ser
      2385 1265      1270      1275      1280
      2387 Lys Asp Glu Phe Ile Phe Ile Arg Ala Leu Gln Ser Cys Leu Ile Ile
      2388      1285      1290      1295
      2390 Phe Tyr Tyr Tyr Tyr Tyr Tyr Leu Asn Gly Lys Phe Thr Glu Tyr Ile
      2391      1300      1305      1310
      2393 Asp Ile Leu Val Ser Ile Lys Tyr Phe Lys Lys Arg Glu Lys Val Asp
      2394      1315      1320      1325

```

same
error

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

2396 Leu Ile Leu Gly Phe Leu Leu Ala Ile Lys Val Phe Ser Asn Phe Gln
 2397 1330 1335 1340
 2399 Asn Val Ser Asn Glu Pro Val Gly Leu Val Tyr Gly Tyr Asp Glu Ile
 2402 1345 1350 1355 1360
 2404 Ser Ile Cys Ile Lys Asn Tyr Gln Leu Asp Phe Tyr Phe Leu Thr Leu
 2405 1365 1370 1375
 2407 Asn Lys Trp Thr Tyr Ile Ile Ile Lys Ser Cys Asp Val Val Ile Thr
 2408 1380 1385 1390
 E--> 2410 Tyr Phe Leu Ile Xaa Lys Ile Xaa Asn Arg Glu Lys Ile Arg Leu Leu
 2411 1395 1400 1405
 E--> 2413 Ser Leu Leu Xaa Met Xaa Tyr Asn Ile Leu Ile Pro Phe Xaa Ile Asp
 2414 1410 1415 1420
 2416 Ser Arg Arg Ile Arg Lys Ile Ile Ile Ala Ser Asn Gln Ile Gln Asn
 2417 1425 1430 1435 1440
 E--> 2419 Xaa Ile Met Leu Leu Thr Phe Glu Lys Ser Ser Ser Leu Asp Asn Ile
 2420 1445 1450 1455
 E--> 2422 Leu Ile Asp Lys His Xaa Tyr Ile Tyr Ile Tyr Xaa Tyr Gln Leu Leu
 2423 1460 1465 1470
 E--> 2425 Lys Xaa Ile Phe Lys Leu Ile Lys Phe Ile Lys Ile Lys Arg Thr Lys
 2426 1475 1480 1485
 E--> 2428 Leu Val Leu His His Asn Val Val Ser Val Arg Thr Cys Glu Ile Xaa
 2429 1490 1495 1500
 2431 Ile Asn Thr Asp Arg Lys Phe Gln Thr Ile Thr Ser Ser Thr Lys Gln
 2432 1505 1510 1515 1520
 2434 Asn His Ile Lys Glu Ser Ser Tyr Ile Tyr Ile Tyr Ile Tyr Thr Thr
 2435 1525 1530 1535
 2437 Leu Leu Ile Leu Trp Thr Tyr Asn Thr Ser Gln Glu Thr Glu Thr Lys
 2438 1540 1545 1550
 E--> 2440 Val Ala Glu Ser Trp Gln Xaa Leu Lys Arg Leu Phe Val Glu Val Lys
 2441 1555 1560 1565
 2443 Glu Thr His Val Tyr Lys Asn Cys His Asp Tyr Thr Leu Lys Lys Lys
 2444 1570 1575 1580
 2446 Arg Gly Glu Arg Glu Lys Glu Ala Pro Leu Leu Thr Gly Leu Val His
 2447 1585 1590 1595 1600
 2449 Glu Glu Leu Phe Val Asp Ala Val Gln Thr Phe Val Ser Thr Asp Gly
 2450 1605 1610 1615
 2452 Asn Lys Glu Ala Val Ser Gln His Ala Ile Cys Ser Leu Trp Ser Pro
 2453 1620 1625 1630
 2455 Asp Leu Ser Lys Asp Leu Pro Leu Arg Phe Pro His Ala Pro His Leu
 2456 1635 1640 1645
 2458 Phe Gln Arg Lys Leu His Ser Gly Gln Glu Ser Ile Ser Leu Tyr Lys
 2459 1650 1655 1660
 2462 His His Leu Pro Pro Thr Pro Pro Pro Pro Pro Leu Leu Arg Arg
 2463 1665 1670 1675 1680
 2465 Met Lys Ala Leu Leu Leu Val Ile Phe Thr Leu Ala Ser Ser Leu Gly
 2466 1685 1690 1695
 2468 Ala Phe Ala Glu Gln Cys Gly Arg Gln Ala Gly Gly Ala Leu Cys Pro
 2469 1700 1705 1710
 2471 Gly Gly Leu Cys Cys Ser Gln Tyr Gly Trp Cys Gly Asn Thr Asp Pro

same

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
 TIME: 11:22:24

Input Set : A:\pto.amc.txt
 Output Set: N:\CRF4\03202003\I892635.raw

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2472      1715      1720      1725
E--> 2474 Xaa Cys Gly Gln Gly Cys Xaa Xaa Gln Cys Xaa Xaa Ser Thr Pro Ser
2475      1730      1735      1740
E--> 2477 Pro Ser Thr Pro Ser Gly Gly Gly Xaa Val Gly Ser Ile Ile Ile Ser
2478 1745      1750      1755      1760
E--> 2480 Ser Leu Phe Xaa Gln Met Leu Lys His Xaa Xaa Asp Xaa Ala Xaa Pro
2481      1765      1770      1775
E--> 2483 Gly Xaa Gly Phe Tyr Xaa Xaa Thr Ala Phe Ile Ser Ala Ala Xaa Ser
2484      1780      1785      1790
E--> 2486 Phe Xaa Gly Phe Gly Thr Thr Xaa Asp His Ser Thr Asn Xaa Xaa Xaa
2487      1795      1800      1805
E--> 2489 Ile Xaa Ala Phe Leu Val Xaa Thr Ser Xaa Glu Thr Thr Xaa Asn Pro
2490      1810      1815      1820
E--> 2492 Xaa Xaa Ser Arg Gly Ser Ser Xaa Xaa Tyr Xaa Thr Xaa Xaa Cys Ile
2493 1825      1830      1835      1840
E--> 2495 Gly Xaa Gly Thr Trp Val Val His Arg Ala Xaa Trp Pro Phe Ala Trp
2496      1845      1850      1855
E--> 2498 Gly Tyr Cys Phe Val Gln Xaa Gln Asn Pro His Arg Thr Thr Ala Ser
2499      1860      1865      1870
E--> 2501 Pro Ala Arg Xaa Gly Arg Ala Leu Xaa Ala Xaa Asn Thr Thr Ala Glu
2502      1875      1880      1885
2504 Ala Pro Ser Lys Ser His Ser Thr Thr Thr Thr Gly Arg Pro Gly Lys
2505      1890      1895      1900
2507 Pro Ser Ala Pro Thr Cys Ser Thr Thr Gln Thr Trp Trp Pro Pro Thr
2508 1905      1910      1915      1920
2510 Arg Pro Ser Pro Ser Arg Arg Leu Cys Gly Ser Gly Leu Leu Ser Arg
2511      1925      1930      1935
2513 Pro Ser Arg Arg Ala Thr Thr Pro Gly Ala Gly Arg His Pro Thr Pro
2514      1940      1945      1950
2516 Thr Gly Arg Pro Glu Gly Phe Arg Ala Thr Val Ser Pro Pro Thr Ser
2517      1955      1960      1965
2519 Ser Met Glu Gly Trp Ser Ala Gly Lys Gly Pro Met Pro Gly Trp Arg
2522      1970      1975      1980
E--> 2524 Ile Gly Ser Ala Ser Thr Xaa Gly Thr Ala Thr Cys Trp Gly Ala Thr
2525 1985      1990      1995      2000
E--> 2527 Glu Thr Thr Trp Thr Ala Thr Thr Xaa Val Pro Leu Leu Xaa Pro Ile
2528      2005      2010      2015
2530 Leu Cys Ala Asn Pro Cys Asn Asn Ala Ile Asn Ala Thr Ala Glu Ile
2531      2020      2025      2030
2533 Ala Thr Pro Val Asp Cys Arg Ser Cys Gly Gly Asn Leu Gln Lys Leu
2534      2035      2040      2045
2536 Ser Thr Ser Ser Trp Pro Ser Ile Ile Val Asp Arg Arg Gln Met His
2537      2050      2055      2060
E--> 2539 Pro Ser Asn Val Leu Glu Xaa Val Asn Ala Xaa Ser Ile Gly Lys Leu
2540 2065      2070      2075      2080
2542 Lys Met Leu Glu Ile Lys Leu Phe Ile Phe Tyr Asn Tyr Lys Tyr Phe
2543      2085      2090      2095
E--> 2545 Asn Ile Phe Phe Asn Leu Lys Asp Pro Lys Lys Ser Xaa Tyr Lys Asp
2546      2100      2105      2110

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*same
 error*

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

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E--> 2548 Phe Ile Tyr Gly Leu Gly Tyr Xaa Xaa Xaa Ile Xaa Lys Ile Asn Ile
      2549          2115          2120          2125
      2551 Leu Leu Ile Leu Arg Ile Leu Lys Lys His Asn Tyr Lys Asp Phe Leu
      2552          2130          2135          2140
E--> 2554 Tyr Gly Xaa Gly Tyr Gln Xaa Xaa Ile Val Lys Ile Xaa Ile Asn Cys
      2555 2145          2150          2155          2160
E--> 2557 Ile Lys Leu Lys Tyr Lys Tyr Ile Xaa Ile Met Ile Ser Arg Met Trp
      2558          2165          2170          2175
E--> 2560 Arg Leu Asp Leu Glu Ile Glu Val Glu Thr Xaa Xaa Glu Ile Met Leu
      2561          2180          2185          2190
      2563 Ile Met Gly Asn Phe Leu Leu Phe Pro Arg Arg Pro Trp Lys Pro Asn
      2564          2195          2200          2205
E--> 2566 Ile Arg Asn Arg Ser Cys Asn Asn His Val Ile Ile Xaa Glu Leu Val
      2567          2210          2215          2220
E--> 2569 Val Val Ile Leu Arg Pro Gln Ile Thr Val Phe Xaa Gln Gly Thr Asn
      2570 2225          2230          2235          2240
      2572 Ile Asn Glu Ser Asn Val Val Ser Ile Leu Phe Tyr Thr Phe Ile Pro
      2573          2245          2250          2255
E--> 2575 Xaa Ser Arg Cys Ser His Asp Leu Ala His Pro Lys Cys Ile Arg Ser
      2576          2260          2265          2270
      2578 Leu Ile Pro Leu Arg Trp Ser Val Leu Thr Arg Asp Leu Val Glu Gly
      2579          2275          2280          2285
E--> 2582 Ala Val Ser Phe Xaa Tyr Val Glu Val Lys Asp His Leu Tyr Xaa Xaa
      2583          2290          2295          2300
E--> 2585 Pro Cys Arg Phe Thr Xaa Gly Xaa Ser Leu Glu Ile Gly Leu Pro Trp
      2586 2305          2310          2315          2320
E--> 2588 Asn Ser Xaa Gly Val Pro
      2589          2325
      2592 <210> SEQ ID NO: 25
      2593 <211> LENGTH: 2258
      2594 <212> TYPE: PRT
      2595 <213> ORGANISM: Musa acuminata
      2597 <400> SEQUENCE: 25
      2598 Ala Arg Ser Thr Asn Glu Leu Leu Thr Leu Met Ser Gln Ile Val Ile
      2599 1          5          10          15
E--> 2601 Asp Glu Lys Pro Tyr Pro Thr Arg Asn Leu Xaa Thr Trp Ser Gln Asp
      2602          20          25          30
      2604 Phe Leu Ser Lys Asp Ser Pro Leu Arg Phe Pro Thr Phe Thr Ser Phe
      2605          35          40          45
      2607 Gly Pro Glu Ala Ser Gln Arg Ala Gly Ile His Phe Ser Ile Ala Pro
      2608          50          55          60
      2610 Met Arg Lys Ala Ser Arg Gly Gly Ser Leu Pro Arg Arg Ala Val Leu
      2611 65          70          75          80
      2613 Pro Val Arg Leu Val Arg His Gly Ser Ile Leu Arg Pro Arg Met Pro
      2614          85          90          95
      2616 Glu Pro Met Arg Arg Arg Arg Arg Arg Trp Gln Arg Gly Leu Asp His
      2617          100          105          110
      2619 Gln Leu Leu Pro Leu Arg Ala Asp Ala Glu Ala Ser Gln Arg Arg Ser
      2620          115          120          125

```

same
error

same

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

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Input Set : A:\pto.amc.txt

Output Set : N:\CRF4\03202003\I892635.raw

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2622 Leu Pro Arg Gln Gly Phe Leu His Val Gln Arg Leu His Arg Arg Arg
2623      130                      135                      140
E--> 2625 Gln Leu Leu Gln Arg Val Arg Asp Asp Arg Arg Arg Pro Lys Lys Xaa
2626      145                      150                      155                      160
E--> 2628 Lys Glu Ile Ala Ala Phe Leu Ala Xaa Thr Ser His Xaa Thr Thr Gly
2629                      165                      170                      175
E--> 2631 Asn Ser His Ile Ser Arg Ser Ser Thr Val Tyr Gly Ile Xaa Asn Met
2632                      180                      185                      190
E--> 2634 Phe Gly Val Trp Gln Val Gly Xaa Arg Arg Ala Arg Trp Ser Val Arg
2635                      195                      200                      205
E--> 2637 Leu Gly Leu Leu Leu Arg Pro Xaa Thr Lys Pro Ser Ser Xaa Tyr Cys
2638      210                      215                      220
E--> 2642 Val Pro Xaa Pro Xaa Gly Arg Ala Leu Gln Gln Lys Ile Leu Arg Pro
2643      225                      230                      235                      240
E--> 2645 Lys Pro Xaa Gln Ile Ser Xaa Xaa Ala Xaa Phe Xaa Gln Phe Xaa Ala
2646                      245                      250                      255
2648 Ala Ile Glu Phe Thr Thr Met Pro Phe Leu Thr Gln Gln Ser Asp Val
2649                      260                      265                      270
E--> 2651 Xaa Cys Val Gln Gln Xaa Gln Xaa Arg Ala Gly Arg Glu Ser His Arg
2652                      275                      280                      285
E--> 2654 Phe Xaa Xaa Xaa Gln Gln Pro Arg Pro Gly Gly His Xaa Arg Asp His
2655      290                      295                      300
E--> 2657 Leu Xaa Gln Asp Gly Ser Val Val Leu Asp Asp Ser Ser Val Ala Gln
2658      305                      310                      315                      320
2660 Ala Val Val Pro Arg Arg Asp Asn Arg Glu Leu Asp Ala Ile Gln Arg
2661                      325                      330                      335
2663 Arg Pro Gly Gly Arg Lys Ala Ser Gly Leu Arg Cys His His Gln His
2664                      340                      345                      350
2666 His Gln Trp Arg Val Gly Val Arg Glu Arg Val Arg Cys Gln Gly Gly
2667                      355                      360                      365
2669 Gly Asp Arg Leu Leu Gln Glu Val Leu Arg Leu Ala Gly Gly Glu Leu
2670      370                      375                      380
2672 Arg Arg Gln Leu Gly Leu Leu Gln Pro Glu Thr Leu Cys Phe Tyr Ser
2673      385                      390                      395                      400
2675 Ser Tyr Ser His Ile Leu Ala Val Ser Tyr Gly Asp Asn Leu Glu Cys
2676                      405                      410                      415
2678 Tyr Asn Gln Arg Pro Phe Thr Ser Asp Thr Thr Val Thr Asn Pro Cys
2679                      420                      425                      430
2681 Asn Asn Ala Ile Asn Ala Ile Thr Glu Ile Ala Thr Pro Val Asp Cys
2682      435                      440                      445
E--> 2684 Arg Ser Cys Gly Gly Ser Leu Gln Lys Leu Xaa Tyr Ile His Gly Pro
2685      450                      455                      460
2687 Gln Leu Ser Leu Thr Val Ile Ile Cys Ile His Gln Met Ser Ser Asn
2688      465                      470                      475                      480
2690 Val Leu Glu Val Asn Ala Tyr Ser Ile Gly Lys Met Lys Met Leu Glu
2691                      485                      490                      495
2693 Ile Lys Leu Ile Ile Phe Leu Leu Ile Phe Tyr Ile Phe Ser Arg Ser
2694                      500                      505                      510
2696 Lys Ser Asn Tyr Lys Asp Phe Ile Tyr Gly Leu Gly Tyr Glu Tyr Leu

```

*same**more*

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

2697          515          520          525
2699 Ile Ile Lys Ile Asn Ile Leu Phe Asn Leu Lys Asp Leu Ile Ile Ser
2702          530          535          540
2704 Ile Phe Tyr Met Asp Trp Asp Ile Asn Ser Ile Tyr Leu Lys Phe Tyr
2705 545          550          555          560
2707 Lys Asn Phe Lys Phe Lys Asn Asn Thr Lys Asn Ile Ile Arg Ser Asp
2708          565          570          575
2710 Arg Glu Arg Asp Asp Asp His Glu Ile Glu Val Glu Ser Lys Lys Glu
2711          580          585          590
2713 Ile Thr Leu Ile Met Gly Asn Phe Val Leu Phe Ala Arg Ser Arg Trp
2714          595          600          605
2716 Pro Trp Thr Pro Asn Ile His Asn Arg His Ala Ile Thr Met Leu Ser
2717          610          615          620
2719 Tyr Val Ser Leu Ser His Ile Leu Pro Ile Thr Ser Ser Arg Ile Leu
2720 625          630          635          640
E--> 2722 Ile Lys Pro Ala His His Ser Phe Ala Pro Leu Tyr His Xaa Ser Val
2723          645          650          655
E--> 2725 Arg Met Ala Pro Ile Pro Ser Val Trp Ser Pro Gly Xaa Trp Ser Val
2726          660          665          670
E--> 2728 Leu Thr Arg Gly Leu Val Glu Gly His Arg Pro Cys Xaa Leu Arg Gln
2729          675          680          685
2731 Arg Leu Lys Ile Thr Pro Leu Ala Ile Arg Trp Val Pro Ile Arg Ser
2732          690          695          700
E--> 2734 Lys Ser Gly Gly Phe Xaa Thr Arg Pro Ile Gln Tyr Leu Ser Gln Glu
2735 705          710          715          720
2737 Leu Glu Leu Arg Val Gly Ser Thr Pro Asn Ala Val Pro Gly Val Ala
2738          725          730          735
2740 Phe Ile Pro Ile Pro Ala Cys Asp His Thr Leu Ser Ser Ser Val Ile
2741          740          745          750
E--> 2743 Ile Val Arg Trp Val His Ala Leu Ser Asn Leu Leu Asp Ser Xaa Ser
2744          755          760          765
2746 Phe Asp Thr Ala Ser Tyr Leu Leu Cys Gly Pro Ile His Ser Cys Ile
2747          770          775          780
2749 Val Ser Tyr Gly Leu Glu Gln Ser Val Cys Arg Gly Thr Val Ser Ser
2750 785          790          795          800
2752 Gly Trp Leu Ala Ser Gly Ser Trp His Val Gly Ser Ile Gln His Ile
2753          805          810          815
2755 Gly Leu Gly Ile Pro Cys Arg Val Tyr Cys Gly Ser His Val Met Trp
2756          820          825          830
2758 Gly Gly Cys Gln Asn Met Leu Tyr His Ser Leu Pro Thr Lys Glu Leu
2759          835          840          845
2762 Cys His Arg Arg Ile Val Asp Thr Ala Trp Val Leu Trp Ser Val Leu
2763          850          855          860
E--> 2765 Val Arg Leu Ser Trp Val Asp Tyr Phe Ile Lys Leu Ala Xaa Cys Trp
2766 865          870          875          880
E--> 2768 Leu Gly Lys Val His Leu Val Gly Met Val Glu Thr Xaa Pro Arg Lys
2769          885          890          895
2771 Val Gly Asp Leu Val Phe Asp Asn Gln Leu Phe Met Arg Arg Met Val
2772          900          905          910

```

Same

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
 TIME: 11:22:24

Input Set : A:\pto.amc.txt
 Output Set: N:\CRF4\03202003\I892635.raw

```

2774 Ser Leu Arg Trp Gly Val Cys Ser Phe Arg Phe Val Ala Met Asp Cys
2775          915          920          925
E--> 2777 Leu Leu Glu Ala Trp Phe Asp Cys Ser Val Gly Arg Arg Tyr Leu Xaa
2778          930          935          940
2780 Arg Ser Ser Ile Pro Cys Ser Glu Lys Asp Leu Pro Arg Ser Leu Ala
2781 945          950          955          960
2783 Arg Pro Cys Ser Gln Arg Met Cys Met Ser Arg Ser Ile Gln Pro Cys
2784          965          970          975
2786 Gly Ser Arg Met His Gln Leu Gly Leu Ala Cys Ser Arg Leu Lys Gln
2787          980          985          990
2789 Lys Asp Ile Leu Ala Thr Arg Phe Ala Gln Pro Cys Gly Ser Asn Gln
2790          995          1000          1005
2792 Met His Leu Leu Gly Leu Ala Leu Thr Arg Gln Trp Thr Leu Val Ser
2793 1010          1015          1020
E--> 2795 Glu Lys Gly Leu Xaa Lys Thr Leu Ala Arg Thr Ser Arg Tyr Leu Leu
2796 1025          1030          1035          1040
2798 Asp Asn Arg Cys Leu Val Met Asp Leu Arg Leu Ser Arg Gln Arg Leu
2799          1045          1050          1055
2801 Ala Glu Thr Trp Ala Met Asp Ala Tyr Lys Glu Arg Met Ala Arg Asp
2802          1060          1065          1070
2804 Arg Ser Asn Asn Tyr Lys Phe Ile Lys His Leu Met Asp Ala Tyr Lys
2805          1075          1080          1085
E--> 2807 Glu Arg Thr Asp Arg Asp Arg Ser Asn Asn Tyr Lys Phe Ile Lys Xaa
2808 1090          1095          1100
E--> 2810 Leu Leu Xaa His Trp Thr Lys Glu Val Leu Cys Asn Ile Lys Ile Gly
2811 1105          1110          1115          1120
2813 Arg His Lys Tyr Tyr Phe Gln Ile Leu Phe Ser Leu Ser Pro Ser Pro
2814          1125          1130          1135
2816 Pro Leu Pro Phe Ser Ile Phe Ser Ile Leu Ser His Asn Ile Arg Thr
2817          1140          1145          1150
E--> 2819 Asp Met Thr Thr Phe Asp Leu Leu Thr Xaa Leu Xaa His Gln Lys Pro
2822          1155          1160          1165
E--> 2824 Tyr Cys Leu Pro His Asp Gly Asp Glu Leu Leu Val Gln Xaa Ser Asn
2825          1170          1175          1180
E--> 2827 Xaa Trp Lys Trp Thr Ser Thr Met Thr Arg Met Ala Thr Cys Ser Cys
2828 1185          1190          1195          1200
2830 Val Asp Phe Pro Ser Asn Gln Ser Ser Trp Asn Arg Ile Arg Arg Leu
2831          1205          1210          1215
2833 Lys Gly Asp Asp His Val Gln Cys His Ala His Gln His Asn Ser Asn
2834          1220          1225          1230
2836 Thr Val Gln Lys Asp Leu Ile Leu His Leu Ala His Pro Ala Ala Gly
2837          1235          1240          1245
2839 Ile Asp Trp Arg Lys Arg Arg Val Ser Leu Pro Ile His Ile Gln Arg
2840          1250          1255          1260
2842 Thr Asn Ser Phe Ser Ser Asp Glu His Phe Ser Pro Ala Leu Tyr Phe
2843 1265          1270          1275          1280
2845 Ile Ile Ile Ile Ile Ile Asn Met Val Ser Leu Gln Asn Ile Ile Phe
2846          1285          1290          1295
2848 Phe Gln Asn Ile Leu Lys Asn Asp Lys Gly Arg Arg Trp Ile Ser Asp

```

Jane

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

2849          1300          1305          1310
2851 Phe Tyr Cys Glu Gln Lys Ser Leu Val Arg Thr Ser Lys Met Cys Gln
2852          1315          1320          1325
2854 Met Asn Pro Asn Lys Trp Val Trp Ser Met Val Thr Met Arg Ser Val
2855          1330          1335          1340
2857 Phe Val Tyr Lys Lys Ile Ile Asn Leu Ile Phe Ile Phe Pro Leu Ile
2858 1345          1350          1355          1360
E--> 2860 Ser Gly His Asp Ile Ser Ser Asn His Val Met Xaa Asp Glu Xaa His
2861          1365          1370          1375
E--> 2863 Ile Phe Xaa Lys Leu Xaa Ile Glu Lys Lys Asp Tyr Tyr Pro Phe Tyr
2864          1380          1385          1390
E--> 2866 Xaa Cys Xaa Ile Ile Phe Ser Leu Ser Ile Ile His Val Glu Glu Arg
2867          1395          1400          1405
E--> 2869 Leu Ser His Gln Ile Lys Tyr Arg Xaa Lys Ser Cys Phe Leu Asn Ser
2870          1410          1415          1420
E--> 2872 Lys Asn Asn Leu Pro Leu Leu Ile Ile Ser Leu Leu Ile Ser Ile Xaa
2873 1425          1430          1435          1440
E--> 2875 Ile Tyr Ile Tyr Xaa Tyr Ile Asn Phe Xaa Ile Phe Leu Asn Leu Asn
2876          1445          1450          1455
2878 Leu Ser Lys Lys Asp Lys Leu Asn Phe Cys Ile Ile Met Val Glu Leu
2879          1460          1465          1470
E--> 2882 Val Lys Xaa Gly Ser Arg Thr Leu Ile Glu Asn Ser Lys Pro Leu Leu
2883          1475          1480          1485
2885 Val Leu Leu Asp Glu Asn Lys Thr Ile Lys Asn Pro Leu Ile Tyr Ile
2886          1490          1495          1500
2888 Tyr Ile Tyr Ile Leu Leu Tyr Leu Phe Phe Gly Arg Thr Thr Gln Val
2889 1505          1510          1515          1520
E--> 2891 Arg Lys Pro Lys Gln Arg Trp Arg Lys Val Gly Arg Xaa Arg Asp Phe
2892          1525          1530          1535
2894 Ser Lys Arg Arg His Thr Ser Ile Arg Ile Val Met Thr Ile Arg Arg
2895          1540          1545          1550
2897 Lys Arg Gly Glu Arg Glu Arg Arg Lys Arg His Cys Pro Val Leu Ser
2898          1555          1560          1565
2900 Met Arg Asn Cys Leu Ser Thr Asn Glu Gln Tyr Lys His Leu Cys Arg
2901          1570          1575          1580
2903 Gln Ile Cys Ser Lys Gly Ser Phe Thr Ala Gly Arg Asn Pro Phe Leu
2904 1585          1590          1595          1600
2906 Tyr Ile Ser Thr Thr Ser His Pro His His His His His His Cys
2907          1605          1610          1615
2909 Gly Gly Arg Pro Cys Cys Trp Ser Phe Leu Pro Trp Pro Arg Arg Ser
2910          1620          1625          1630
2912 Ala Pro Ser Pro Ser Asn Ala Glu Gly Lys Pro Gly Gly Leu Ser Ala
2913          1635          1640          1645
2915 Pro Ala Gly Cys Ala Val Ala Ser Thr Ala Gly Ala Val Thr Arg Ile
2916          1650          1655          1660
E--> 2918 His Xaa Ala Val Lys Asp Ala Xaa Xaa Asn Ala Xaa Ala Pro Arg Pro
2919 1665          1670          1675          1680
E--> 2921 Pro Leu Pro Leu Arg Ala Ala Val Ala Xaa Leu Ala Arg Ser Ser Ser
2922          1685          1690          1695

```

same

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

E--> 2924 Pro Pro Ser Ser Ser Arg Cys Ser Ile Xaa Xaa Thr Gln Pro Ala Pro
      2925          1700          1705          1710
E--> 2927 Ala Xaa Ala Ser Thr Arg Xaa Pro Pro Ser Ser Pro Pro Pro Xaa Pro
      2928          1715          1720          1725
E--> 2930 Ser Xaa Gly Ser Gly Xaa Pro Ala Thr Thr Pro Xaa Ile Xaa Xaa Xaa
      2931          1730          1735          1740
E--> 2933 Ser Arg Leu Ser Trp Xaa Xaa Xaa Leu Xaa Arg Xaa Xaa Val Ile Xaa
      2934 1745          1750          1755          1760
E--> 2936 Xaa Ser Pro Glu Ala Arg Leu Gln Xaa Xaa Asp Arg Xaa Leu Asn Ala
      2937          1765          1770          1775
E--> 2939 Leu Gly Xaa Ala Arg Gly Trp Ser Thr Val Pro Xaa Gly Xaa Ser Arg
      2942          1780          1785          1790
E--> 2944 Gly Val Thr Ala Ser Ser Xaa Asn Arg Thr Leu Ile Gly Leu Leu Arg
      2945          1795          1800          1805
E--> 2947 Arg Gln Leu Ala Xaa Ala Val Arg Cys Xaa Gln Xaa Ile Leu Arg Pro
      2948          1810          1815          1820
      2950 Lys Pro His Pro Asn Leu Ile Gln Leu Gln Leu Arg Ala Gly Arg Glu
      2951 1825          1830          1835          1840
      2953 Asn His Arg Leu Arg Pro Ala Gln Gln Pro Arg Pro Gly Gly His Arg
      2954          1845          1850          1855
      2956 Pro Asp His Leu Leu Gln Asp Gly Ser Val Val Leu Asp Asp Ser Ser
      2957          1860          1865          1870
      2959 Val Ala Gln Ala Val Val Pro Arg Arg Asp Asn Arg Glu Leu Asp Ala
      2960          1875          1880          1885
      2962 Ile Gln Arg Arg Pro Gly Gly Arg Lys Ala Ser Gly Leu Arg Cys His
      2963          1890          1895          1900
      2965 His Gln His His Gln Trp Arg Val Gly Val Arg Glu Arg Val Arg Cys
      2966 1905          1910          1915          1920
E--> 2968 Gln Gly Gly Gly Asp Arg Leu Leu Gln Xaa Val Leu Arg Leu Ala Gly
      2969          1925          1930          1935
E--> 2971 Gly Glu Leu Arg Arg Gln Leu Gly Leu Leu Gln Pro Xaa Ser Leu Tyr
      2972          1940          1945          1950
E--> 2974 Leu Xaa Arg Tyr Tyr Val Arg Ile His Val Ile Thr Gln Thr Leu Leu
      2975          1955          1960          1965
      2977 Leu Lys Arg Leu Arg Glu Leu Ile Val Glu Val Ala Glu Glu Ile Phe
      2978          1970          1975          1980
      2980 Asn Lys Ser Ala Glu Gln Val His Gly Pro Gln Ser Ser Leu Ile Val
      2981 1985          1990          1995          2000
E--> 2983 Val Arg Cys Ile His Gln Met Ser Trp Ser Xaa Xaa Met Arg Xaa Xaa
      2984          2005          2010          2015
      2986 Ser Val Asn Arg Cys Asn Lys Asn Tyr Leu Phe Phe Ile Ile Ile Asn
      2987          2020          2025          2030
      2989 Ile Leu Ile Tyr Phe Leu Ile Leu Lys Ile Leu Lys Asn Leu Ile Ile
      2990          2035          2040          2045
E--> 2992 Arg Ile Leu Tyr Met Asp Trp Asp Thr Xaa Lys Xaa Xaa Leu Xaa Lys
      2993          2050          2055          2060
      2995 Leu Ile Tyr Phe Ser Gly Ser Lys Asn Ile Ile Ile Arg Ile Phe Tyr
      2996 2065          2070          2075          2080
E--> 2998 Met Asp Xaa Asp Thr Asn Xaa Xaa Leu Lys Phe Xaa Tyr Lys Ile Val

```

same

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

2999          2085          2090          2095
E--> 3002 Lys Ser Lys Asn Asn Thr Lys Asn Ile Xaa Ser Tyr Arg Glu Cys Gly
3003          2100          2105          2110
E--> 3005 Ala Ile Ser Arg Ser Arg Leu Arg Leu Xaa Xaa Lys Leu Cys Ser Trp
3006          2115          2120          2125
3008 Glu Ile Phe Phe Cys Phe Gln Asp Asp Arg Gly Asn Leu Thr Ser
3009          2130          2135          2140
E--> 3011 Ala Ile Gly His Ala Ile Thr Met Leu Ser Ser Xaa Asn Leu Ser Ser
3012 2145          2150          2155          2160
E--> 3014 Ser Ser Tyr Gly His Lys Ser Gln Ser Ser Xaa Lys Ala Arg Ile Leu
3015          2165          2170          2175
E--> 3017 Met Ser Pro Thr Tyr Leu Tyr Cys Phe Thr Leu Leu Tyr Arg Xaa Arg
3018          2180          2185          2190
3020 Gly Val Arg Thr Ile Trp Pro Ile Pro Ser Ala Asp His Tyr Asp Leu
3021          2195          2200          2205
E--> 3023 Tyr Val Gly Ala Cys Pro Glu Ile Leu Arg Gly His Arg Ser His Xaa
3024          2210          2215          2220
E--> 3026 Ser Thr Trp Arg Leu Lys Ile Thr Phe Ile Xaa Xaa Leu Val Asp Ser
3027 2225          2230          2235          2240
E--> 3029 Lys Leu Glu Val Asp Leu Xaa Arg Arg Ser Val Ser Leu Gly Thr Leu
3030          2245          2250          2255
E--> 3032 Gly Xaa
3036 <210> SEQ ID NO: 26
3037 <211> LENGTH: 2359
3038 <212> TYPE: PRT
3039 <213> ORGANISM: Musa acuminata
3041 <400> SEQUENCE: 26
3042 Gln Arg Gly Arg Leu Met Ser Tyr His Cys His Arg Met Arg Ser Arg
3043 1          5          10          15
E--> 3045 Ile Gln His Ala Ile Cys Xaa Leu Gly His Arg Thr Ser Tyr Pro Lys
3046          20          25          30
3048 Thr Arg Leu Cys Asp Phe Pro His Ser Pro His Leu Val His Arg Lys
3049          35          40          45
3051 Leu His Ser Gly Gln Glu Ser Ile Ser Leu Tyr Lys His His Leu Pro
3052          50          55          60
3054 Pro Thr Pro Pro Pro Leu Pro Leu Leu Arg Arg Met Lys Ala Leu Leu
3055 65          70          75          80
3057 Leu Val Ile Phe Thr Leu Ala Ser Ser Leu Gly Ala Phe Ala Glu Gln
3058          85          90          95
3062 Cys Gly Arg Gln Ala Gly Gly Ala Leu Cys Pro Gly Gly Leu Cys Cys
3063          100          105          110
3065 Ser Gln Tyr Gly Trp Cys Gly Asn Thr Asp Pro Tyr Cys Gly Gln Gly
3066          115          120          125
3068 Cys Gln Ser Gln Cys Gly Gly Ser Gly Gly Ser Gly Gly Ser Val
3069          130          135          140
3071 Ala Ser Ile Ile Ser Ser Ser Leu Phe Glu Gln Met Leu Lys His Arg
3072 145          150          155          160
3074 Asn Asp Ala Ala Cys Pro Gly Lys Gly Phe Tyr Thr Tyr Asn Ala Phe
3075          165          170          175

```

*same**same*

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

3077 Ile Ala Ala Ala Asn Ser Phe Ser Gly Phe Gly Thr Thr Gly Asp Asp
3078                180                185                190
E--> 3080 Pro Arg Arg Xaa Arg Arg Ser Arg Leu Ser Trp Arg Xaa Arg Leu Thr
3081                195                200                205
E--> 3083 Xaa Arg Gln Val Ile Xaa Thr Ser Pro Glu Ala Arg Lys Leu Phe Met
3084                210                215                220
E--> 3086 Gly Xaa Lys Thr Glu Cys Leu Gly Phe Gly Arg Trp Val Gly Asp Ala
3087 225                230                235                240
E--> 3089 Pro Asp Gly Pro Tyr Ala Leu Gly Tyr Cys Phe Val Gln Xaa Gln Asn
3090                245                250                255
E--> 3092 Pro His Arg Xaa Thr Ala Ser Xaa Leu Pro Xaa Ala Val Arg Cys Ser
3093                260                265                270
E--> 3095 Lys Lys Tyr Gly Arg Ser Pro Ser Lys Phe His Xaa Xaa Pro Xaa Ser
3096                275                280                285
E--> 3098 Xaa Ser Ser Ser Pro Arg Ser Ser Ser Gln Arg Cys Xaa Phe Arg Asn
3099                290                295                300
E--> 3101 Asn Pro Met Cys Xaa Ala Cys Ser Xaa Tyr Xaa Tyr Gly Pro Ala Gly
3102 305                310                315                320
E--> 3104 Arg Ala Ile Gly Ser Asp Xaa Xaa Asn Asn Pro Asp Leu Val Ala Thr
3105                325                330                335
E--> 3107 Asp Ala Thr Ile Ser Phe Lys Thr Xaa Leu Trp Phe Trp Met Thr Xaa
3108                340                345                350
E--> 3110 Gln Ser Pro Lys Pro Xaa Cys His Asp Val Ile Thr Gly Ser Trp Thr
3111                355                360                365
3113 Pro Ser Asn Ala Asp Gln Ala Ala Gly Arg Leu Pro Gly Tyr Gly Val
3114 370                375                380
3116 Thr Thr Asn Ile Ile Asn Gly Gly Leu Glu Cys Gly Lys Gly Tyr Asp
3117 385                390                395                400
3119 Ala Arg Val Ala Asp Arg Ile Gly Phe Tyr Lys Arg Tyr Cys Asp Leu
3122                405                410                415
3124 Leu Gly Val Ser Tyr Gly Asp Asn Leu Asp Cys Tyr Asn Gln Arg Pro
3125                420                425                430
3127 Phe Ala Ser Thr Ala Ala Thr Ala Thr Phe Arg Ala Met Glu Thr Thr
3128                435                440                445
3130 Trp Ser Ala Thr Thr Arg Asp Pro Leu Leu Ser Pro Ile Leu Leu Arg
3131 450                455                460
3133 Ile His Val Ile Thr Gln Thr Leu Leu Leu Arg Arg Leu Arg Glu Leu
3134 465                470                475                480
E--> 3136 Thr Val Glu Val Ala Glu Glu Val Phe Asn Lys Ser Leu Xaa Thr Tyr
3137                485                490                495
3139 Met Ala His Asn Tyr Arg Pro Ser Tyr Ala Ser Ile Lys Cys Pro Gln
3140                500                505                510
3142 Met Ser Trp Ser Lys Met Arg Ile Arg Ser Val Lys Arg Cys Asn Lys
3143                515                520                525
3145 Asn Leu Phe Phe Tyr Asn Tyr Lys Tyr Phe Asn Ile Phe Phe Asn Leu
3146 530                535                540
3148 Lys Asp Pro Lys Asn Leu Ile Ile Arg Ile Leu Tyr Met Asp Trp Asp
3149 545                550                555                560
3151 Thr Lys Asn Ile Leu Lys Leu Ile Tyr Phe Leu Ile Leu Lys Ile Leu

```

same

RAW SEQUENCE LISTING

DATE: 03/20/2003

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Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

3152          565          570          575
3154 Val Phe Ser Ile Trp Ile Gly Ile Leu Thr Arg Phe Thr Tyr Lys Asn
3155          580          585          590
3157 Phe Asn Ile Lys Ile Leu Asn Leu Lys Ile Lys Ile Leu Lys Ile Ser
3158          595          600          605
3160 Lys Tyr Asn Gly Asn His Glu Ile Glu Asn Val Met Ile Glu Ile Met
3161          610          615          620
3163 Arg Ser Arg Leu Arg Val Lys Arg Lys Leu Arg Ser Trp Glu Ile Ser
3164 625          630          635          640
3166 Phe Cys Leu His Gly Arg Asp Gly Asp Arg Gly His Leu Thr Ser Thr
3167          645          650          655
3169 Thr Gly Met Gln Pro Cys Cys His Met Leu Ala Cys Leu Ile Ser Tyr
3170          660          665          670
3172 Asp His Glu Ser His Ser Leu His Glu Tyr Leu Ser Gln Leu Ser Ile
3173          675          680          685
E--> 3175 Thr Val Leu His Leu Cys Thr Ile Xaa Glu Val Phe Val Trp Leu Asp
3176          690          695          700
E--> 3178 Pro Ser Arg Val Tyr Gly Leu Pro Xaa Pro Gly Ala Cys Pro Glu Val
3179 705          710          715          720
E--> 3182 Leu Arg Gly Ile Asp Leu Val Xaa Leu Gly Arg Gly Arg Ser Leu Leu
3183          725          730          735
3185 Leu Ser Val Gly Cys Leu Tyr Lys Gly Arg Asn His Glu Gly Asp Ser
3186          740          745          750
3188 Leu Asp Leu Phe Asn Ile Ala Ser Lys Ser Trp Ser Tyr Val Tyr Glu
3189          755          760          765
3191 Val Arg Pro Pro Met Leu Phe Leu Gly Ser Leu Leu Tyr Leu Phe Leu
3192          770          775          780
3194 His Val Ile Ile His Ser Ser Phe Asn His Leu Gln Ser Ser Ser Tyr
3195 785          790          795          800
E--> 3197 Val Gly Cys Met His Cys Leu Ile Tyr Ser Ile Gln Xaa Arg Ser Thr
3198          805          810          815
3200 Leu Leu Pro Thr Tyr Tyr Val Ala Gln Tyr Ile Val Val Leu Ser His
3201          820          825          830
3203 Thr Ala Ser Ser Lys Ala Cys Ala Glu Glu Leu Cys Gln Val Val Gly
3204          835          840          845
3206 Trp Pro Arg Ala His Gly Ile Glu Leu Ala Arg Tyr Asn Thr Ser Ala
3207          850          855          860
3209 Gly Tyr His Ala Glu Ser Ile Val Val Val Asp Met Ser Cys Gly Val
3210 865          870          875          880
3212 Asp Ala Lys Ile Cys Tyr Ile Ile Leu Ser Leu Gln Arg Ser Cys Ala
3213          885          890          895
3215 Ile Gly Glu Ser Trp Thr Arg Leu Gly Phe Cys Gly Arg Ser Leu Phe
3216          900          905          910
3218 Ala Ser Val Gly Trp Ile Thr Ser Ser Ser Trp Pro Ser Val Gly Trp
3219          915          920          925
E--> 3221 Ala Lys Tyr Thr Trp Gly Trp Ser Arg Gln Xaa Gln Gly Arg Leu Ala
3222          930          935          940
3224 Lys Thr Trp Phe Ser Thr Ile Asn Cys Leu Gly Glu Trp Tyr Pro Ser
3225 945          950          955          960

```

same

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

3227 Val Gly Val Ser Ala Arg Phe Gly Leu Leu Arg Trp Ile Val Cys Cys
3228                965                970                975
E--> 3230 Arg Arg Leu Gly Ser Ile Ala Leu Lys Ser Gly Glu Gly Ile Xaa Gly
3231                980                985                990
3233 Val Gln Phe Asp His Val Glu Val Asn Lys Arg Thr Cys Gln Glu Val
3234                995                1000                1005
3236 Trp Leu Asp Arg Val Lys Ala Arg Glu Cys Val Cys Arg Gly Leu Phe
3237                1010                1015                1020
3239 Asn His Val Glu Ala Arg Glu Cys Thr Asn Cys Glu Val Trp Leu Ala
3242 1025                1030                1035                1040
3244 His Val Ser Arg Arg Ile Tyr Leu Leu Arg Gly Leu Leu Asn His Val
3245                1045                1050                1055
3247 Glu Ala Ile Lys Cys Thr Cys Tyr Glu Val Trp Leu Asp Leu Leu Asp
3248                1060                1065                1070
E--> 3250 Asn Gly Arg Xaa Val Arg Arg Asp Xaa Pro Arg Leu Ser Trp Gln Gly
3251                1075                1080                1085
3253 Leu Val Asp Thr Cys Ser Thr Ile Asp Ala Tyr Arg Trp Ile Asp Asp
3254                1090                1095                1100
3256 Leu Val Asp Lys Asp Leu Arg Leu Ser Gly Gln Trp Met Pro Ile Ser
3257 1105                1110                1115                1120
3259 Lys Lys Gly Trp Leu Glu Ile Asn Lys Asp Gln Ile Ile Asn Ile Asn
3260                1125                1130                1135
3262 Leu Ser Asn Thr Trp Thr His Ile Ser Glu Lys Gly Arg Ile Glu Ile
3263                1140                1145                1150
E--> 3265 Asn Lys Asp Gln Ile Ile Asn Ile Ser Leu Asn Ser Xaa Tyr Xaa Ile
3266                1155                1160                1165
3268 Gly Gln Lys Arg Tyr Tyr Val Ile Leu Lys Leu Gly Gly Thr Asn Ile
3269                1170                1175                1180
3271 Ile Ser Lys Tyr Phe Ser Pro Ala Leu Arg His His Cys His Phe Asn
3272 1185                1190                1195                1200
E--> 3274 Leu Phe Phe Leu Tyr Asn Tyr Xaa Ile Thr Phe Val His Glu Ile His
3275                1205                1210                1215
E--> 3277 Lys Pro Ser Thr Cys Phe Ser Lys His Xaa Asp Tyr Xaa Asp Thr Arg
3278                1220                1225                1230
3280 Ser His Asn Ile Ala Tyr Leu Asn Met Met Glu Met Asn Phe Ser Trp
3281                1235                1240                1245
E--> 3283 Ser Xaa Tyr Leu Xaa Asn Gly Ser Gly Gln Ala Arg Leu Gly Trp Leu
3284                1250                1255                1260
3286 His Val His Val Leu Thr Phe Gln Val Ile Asn Gln Ala Gly Ile Glu
3287 1265                1270                1275                1280
3289 Asp Asp Ser Arg Ala Met Thr Ile Lys Phe Asn Val Thr Leu Ile Asn
3290                1285                1290                1295
3292 Ile Ile Pro Thr Pro Cys Arg Lys Ile Leu Ser Tyr Ile Asp Leu Pro
3293                1300                1305                1310
3295 Ile Arg Pro Pro Ala Ser Ile Gly Gly Asn Glu Gly Ser Val Ser Gln
3296                1315                1320                1325
3298 Phe Thr Phe Lys Gly Arg Ile His Phe His Gln Met Ser Thr Ser Val
3299                1330                1335                1340
3302 Leu Leu Asp Tyr Ile Leu Leu Leu Leu Leu Leu Ile Glu Trp Val

```

same

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

3303 1345          1350          1355          1360
3305 Tyr Arg Ile Tyr Arg Tyr Phe Ser Phe Asn Lys Ile Phe Lys Met Ile
3306          1365          1370          1375
3308 Lys Gly Glu Gly Gly Phe Asp Leu Arg Ile Phe Ile Val Ser Asn Lys
3309          1380          1385          1390
3311 Ser Leu Leu Glu Leu Pro Lys Cys Val Lys Thr Leu Ile Ser Gly Phe
3312          1395          1400          1405
3314 Gly Leu Trp Leu Arg Asp Gln Tyr Leu Tyr Ile Lys Lys Leu Ser Thr
3315          1410          1415          1420
3317 Phe Leu Phe Phe Asn Pro Val Asp Met Ile Tyr His Asn Gln Ile Met
3318 1425          1430          1435          1440
E--> 3320 Cys Xaa Met Ser Xaa Asn Ile Phe Phe Asn Asn Xaa Asn Tyr Xaa Arg
3321          1445          1450          1455
E--> 3323 Lys Asn Lys Ile Thr Ile Pro Ser Xaa Asp Val Leu Tyr Phe Asn Pro
3324          1460          1465          1470
E--> 3326 Phe Xaa Tyr Arg Phe Thr Asn Lys Lys Asp Tyr Asn Arg Ile Lys Ser
3327          1475          1480          1485
E--> 3329 Asn Thr Glu Xaa Asn His Ala Phe Asp Leu Ile Arg Lys Ile Ile Phe
3330          1490          1495          1500
E--> 3332 Leu Ser Tyr Pro Tyr Ala Xaa Leu Tyr Ile Tyr Ile Xaa Ile Ser Thr
3333 1505          1510          1515          1520
E--> 3335 Ser Lys Xaa Tyr Phe Ile Asn Ile Tyr Gln Asn Lys Lys Ile Asn Ile
3336          1525          1530          1535
E--> 3338 Ser Ser Ala Ser Cys Ser Lys Cys Lys Asn Leu Asn Xaa Asp Leu Glu
3339          1540          1545          1550
3341 His Lys Ile Pro Asn His Tyr Phe Tyr Leu Met Lys Thr Lys Pro Tyr
3342          1555          1560          1565
3344 Lys Arg Ile Leu Leu Tyr Ile Tyr Ile Tyr Tyr Phe Thr Tyr
3345          1570          1575          1580
3347 Ser Leu Asp Val Gln His Lys Ser Gly Asn Arg Asn Lys Gly Gly Gly
3348 1585          1590          1595          1600
E--> 3350 Lys Leu Ala Xaa Ala Glu Glu Thr Phe Arg Arg Ser Glu Gly Asp Thr
3351          1605          1610          1615
3353 Arg Leu Glu Leu Ser Leu Tyr Ala Glu Glu Lys Glu Gly Arg Glu Arg
3354          1620          1625          1630
3356 Glu Gly Ser Ala Thr Val Asp Arg Ser Cys Pro Gly Ile Val Cys Arg
3357          1635          1640          1645
3359 Leu Met Ser Ser Thr Asn Ile Cys Val Asp Arg Trp Gln Gln Met Arg
3362          1650          1655          1660
E--> 3364 Ser Gly Ile Pro Thr Arg Asn Leu Pro Leu Val Xaa Arg Leu Ile Gln
3365 1665          1670          1675          1680
3367 Arg Leu Ala Ser Ala Ile Ser Ser Cys Ala Ser Ser Val Pro Lys Glu
3368          1685          1690          1695
3370 Ala Ser Gln Arg Ala Gly Ile His Phe Ser Ile Ala Pro Pro Pro Thr
3371          1700          1705          1710
3373 His Thr Thr Thr Thr Thr Thr Thr Ala Lys Glu Asp Glu Gly Leu Val
3374          1715          1720          1725
3376 Ala Gly His Phe Tyr Pro Gly Leu Val Ala Arg Arg Leu Arg Arg Ala
3377          1730          1735          1740

```

done

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

3379 Met Arg Lys Ala Ser Arg Gly Gly Ser Leu Pro Arg Arg Ala Val Leu
3380 1745 1750 1755 1760
E--> 3382 Pro Val Arg Leu Val Arg His Gly Ser Xaa Leu Arg Ser Arg Met Pro
3383 1765 1770 1775
E--> 3385 Xaa Pro Met Xaa Xaa Leu His Ala Leu Pro Phe His Ser Glu Arg Arg
3386 1780 1785 1790
E--> 3388 Trp Xaa Xaa Trp Leu Asp His His Leu Leu Pro Leu Xaa Ala Asp Ala
3389 1795 1800 1805
E--> 3391 Glu Ala Ser Xaa Arg Xaa Ser Xaa Pro Arg Gln Xaa Leu Leu Xaa Val
3392 1810 1815 1820
E--> 3394 His Arg Leu His Leu Arg Arg Xaa Leu Leu Xaa Arg Val Arg Asp Xaa
3395 1825 1830 1835 1840
E--> 3397 Xaa Arg Pro Leu His Xaa Xaa Gly Xaa Xaa Gly Phe Leu Gly Xaa Asp
3398 1845 1850 1855
E--> 3400 Xaa Ser Arg Asp Xaa Xaa Ser Xaa Xaa Leu Pro Arg Leu Val Xaa Xaa
3401 1860 1865 1870
E--> 3403 Leu Xaa Ile Asp Xaa Xaa Met His Trp Val Xaa His Val Gly Gly Pro
3404 1875 1880 1885
E--> 3406 Pro Cys Pro Met Ala Xaa Arg Val Gly Leu Leu Leu Arg Pro Xaa Thr
3407 1890 1895 1900
E--> 3409 Glu Pro Ser Ser Asp Tyr Cys Val Ala Ser Ser Xaa Trp Pro Cys Ala
3410 1905 1910 1915 1920
E--> 3412 Ala Xaa Xaa Lys Tyr Tyr Gly Arg Ser Pro Ile Gln Ile Ser Phe Asn
3413 1925 1930 1935
3415 Tyr Asn Tyr Gly Pro Ala Gly Lys Thr Ile Gly Ser Asp Leu Leu Asn
3416 1940 1945 1950
3418 Asn Pro Asp Leu Val Ala Thr Asp Pro Thr Ile Ser Phe Lys Thr Ala
3419 1955 1960 1965
3422 Leu Trp Phe Trp Met Thr Pro Gln Ser Pro Lys Pro Ser Cys His Asp
3423 1970 1975 1980
3425 Val Ile Thr Gly Ser Trp Thr Pro Ser Asn Ala Asp Arg Ala Ala Gly
3426 1985 1990 1995 2000
3428 Arg Leu Pro Gly Tyr Gly Val Thr Thr Asn Ile Ile Asn Gly Gly Leu
3429 2005 2010 2015
3431 Glu Cys Gly Lys Gly Ser Asp Ala Arg Val Ala Asp Arg Ile Gly Phe
3432 2020 2025 2030
E--> 3434 Tyr Xaa Arg Tyr Cys Asp Leu Leu Gly Val Ser Tyr Gly Asp Asn Leu
3435 2035 2040 2045
E--> 3437 Asp Cys Tyr Asn Xaa Ser Pro Phe Thr Xaa Ser Asp Thr Met Cys Glu
3438 2050 2055 2060
3440 Ser Met Arg Asn Lys Arg Tyr Cys Asn Ser Asp Ser Val Ser Leu Lys
3441 2065 2070 2075 2080
3443 Leu Arg Arg Lys Ser Ser Ile Lys Ala Lys Leu Asn Lys Phe Met Ala
3444 2085 2090 2095
3446 Leu Asn His Arg Ser Ser Ser Asp Ala Ser Ile Lys Cys Leu Gly Val
3447 2100 2105 2110
E--> 3449 Ser Xaa Cys Val Phe Xaa Arg Ile Glu Asp Val Arg Ile Asn Lys Ile
3450 2115 2120 2125
E--> 3452 Ile Tyr Phe Leu Leu Ile Phe Tyr Ile Phe Ser Arg Ser Lys Ile Xaa

```

done

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
TIME: 11:22:24

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

```

      3453      2130      2135      2140
E--> 3455 Leu Gly Phe Tyr Ile Trp Ile Gly Ile Leu Xaa Lys Xaa Xaa Tyr Xaa
      3456 2145      2150      2155      2160
      3458 Asn Tyr Thr Phe Asn Leu Lys Asp Pro Lys Lys Thr Leu Gly Phe Ser
      3459      2165      2170      2175
E--> 3461 Ile Trp Xaa Gly Ile Leu Thr Xaa Xaa Asn Cys Lys Asn Xaa Asn Ile
      3462      2180      2185      2190
E--> 3464 Lys Leu Leu Asn Leu Lys Ile Lys Ile Leu Lys Ile Tyr Xaa Asn His
      3465      2195      2200      2205
E--> 3467 Asp Ile Glu Asn Val Ala Leu Arg Ser Arg Asp Arg Gly Asp Xaa Xaa
      3468      2210      2215      2220
      3470 Gly Asn Tyr Val Asn His Gly Lys Phe Ser Phe Val Ser Lys Thr Met
      3471 2225      2230      2235      2240
E--> 3473 Thr Val Glu Thr His Pro Gln Ser Val Met Gln Pro Cys Tyr His Xaa
      3474      2245      2250      2255
E--> 3476 Thr Cys Arg Arg His Leu Thr Ala Thr Asn His Ser Leu Leu Xaa Arg
      3477      2260      2265      2270
      3479 His Glu Tyr Val Gln Arg Ser Ile Tyr Ile Val Leu His Phe Tyr Thr
      3482      2275      2280      2285
E--> 3484 Val Xaa Glu Val Phe Ala Arg Phe Gly Pro Ser Gln Val His Lys Ile
      3485      2290      2295      2300
      3487 Ile Asp Met Thr Ser Thr Leu Glu Arg Val Asn Pro Arg Ser Ser Gly
      3488 2305      2310      2315      2320
E--> 3490 Gly Ile Gly Leu Ile Xaa Leu Arg Gly Gly Arg Ser Pro Leu Xaa Xaa
      3491      2325      2330      2335
E--> 3493 Pro Leu Ile Leu Asn Xaa Arg Xaa Ile Ser Xaa Gly Asp Arg Ser Pro
      3494      2340      2345      2350
E--> 3496 Leu Glu Leu Xaa Arg Gly Xaa
      3497      2355
      3869 <210> SEQ ID NO: 29
      3870 <211> LENGTH: 1568
      3871 <212> TYPE: PRT
      3872 <213> ORGANISM: Musa acuminata
      3874 <400> SEQUENCE: 29
      3875 Gly Ser Gln Leu Leu Gly Met Asp Leu Lys Ile Leu Val Ile Ser Ser
      3876 1 5 10 15
      3878 Lys Leu Glu Lys Ser Leu Pro Arg Ala Leu Ser Pro Leu Met Thr Ser
      3879 20 25 30
      3881 Val Lys Arg Cys Thr Cys Leu Arg Trp Thr His Leu Val Ser Phe Gly
      3882 35 40 45
      3884 Lys Val Arg Lys Ser Ala Glu Tyr Phe Trp Ile Leu Ser Leu Gly Trp
      3885 50 55 60
      3887 Cys Leu His Glu Pro Gln Glu Ser Ser Lys Tyr Gln Lys Pro Asn His
      3888 65 70 75 80
      3890 Lys Leu Lys Cys Asp Ile His Phe Cys Leu Met His Lys Thr Gly His
      3891 85 90 95
      3893 Ser Pro Leu Cys Leu Lys Gln Lys His Ser Ser Pro Ile His Pro Ile
      3894 100 105 110
      3896 Arg Ser Ser Glu Glu Lys Ile Phe Glu Ile His Phe Arg Gln Thr Lys

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same

ppr 22-23

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

3897          115          120          125
3899 Ala Arg Asn Pro Trp Lys Gly Arg Ser Ser Tyr Glu Phe Ser Asn Thr
3902          130          135          140
3904 Cys Asn Ser Thr His Thr Val Asp Val Asn Asp Pro His Ala Leu Ser
3905 145          150          155          160
3907 Leu Leu Gly Ile Lys Pro Asn Met Arg Val Ser Leu Ala Leu Ile Pro
3908          165          170          175
3910 Ile Val Arg Ile Arg Val Ala Leu Arg Glu Gly Gly Ser Glu Leu Val
3911          180          185          190
3913 Gln Trp Ile Lys Thr Tyr Lys Phe Lys Asn Glu Phe Val Asn Thr Arg
3914          195          200          205
3916 Arg Phe Arg Phe Asn Ser Asn Leu Ser Arg Lys Pro Lys Val Asn Ser
3917 210          215          220
3919 Ser Val Asn Asn Asn Phe Gly Lys Val Arg Thr His Thr Phe Lys Glu
3920 225          230          235          240
3922 His Thr Asn Leu Lys Trp Phe Gly Gln Asn Asp Leu His Pro Leu Val
3923          245          250          255
3925 Lys Pro Ser Ser Lys Arg Leu Pro Thr Ser Thr Ser Lys Ser Leu Arg
3926          260          265          270
3928 Gly Arg Thr Asn Thr Ser Leu Thr Thr Phe Tyr Asn Gly Ser Tyr Ser
3929          275          280          285
3931 Tyr Lys Phe Ser Thr Arg Lys Lys Glu Val Asn Met Gln Ala Ile Glu
3932 290          295          300
3934 Asn Lys Thr Cys Arg Leu Cys Gly Phe Phe Ser Gln Ser Ile Ala Ser
3935 305          310          315          320
3937 Gln Lys Leu Tyr Ser Leu Leu Arg Ile Glu Gly Tyr Leu Thr Pro Arg
3938          325          330          335
3940 Gly Phe Lys Phe Gly Leu Gln Ile Ser Asn Ala Leu Gly Phe Pro Arg
3941          340          345          350
3943 Leu Pro Val Pro Pro Pro Val Ser Val His Trp Thr Val Tyr Arg Cys
3944          355          360          365
3946 His Arg Arg Thr Ser Arg Val Leu Gly Gly Ala Thr Ala Thr Phe Ser
3947 370          375          380
3949 Ala His Trp Leu Asp Ser Lys Leu Asp Pro Asn Gln Ser Glu Leu Gly
3950 385          390          395          400
3952 Ser Asn Pro Val Thr Gly Leu Asp Pro Leu Ile Leu Thr Leu Ile Ile
3953          405          410          415
3955 Cys Lys Leu Arg Asn Lys Tyr Ser Pro Lys Gln Val Phe Asn Arg Gln
3956          420          425          430
3958 Thr Ser Ser Leu Leu Pro Ala Ile Phe Arg Gln Thr Ser Asp Ile Pro
3959 435          440          445
3962 Leu Asp Phe Phe Arg Thr Pro Ser Arg Val Pro Ile Leu Trp Arg Val
3963 450          455          460
3965 Arg Val Ala Glu Pro Ser Arg Ser Pro Gln Thr Ala Asp Asp Leu Phe
3966 465          470          475          480
3968 Gly Arg Leu Ser Lys Thr Ser Thr Ser Pro Arg Phe Leu Leu Gly Trp
3969          485          490          495
3971 Phe Arg Gln His Leu Arg Asn Phe Gly Leu Leu Glu Cys Pro Ser Asn
3972          500          505          510

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RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

3974 Leu Thr Pro Val Gly Leu Leu Tyr Ile Phe Arg Leu Ser Leu Ile Leu
3975          515          520          525
3977 His Thr Leu Asn Asn Met Asp Ile Asn Pro Ile Asn Phe His His Gln
3978          530          535          540
3980 Asn Ser Thr Phe Asn Lys His Pro Tyr Ser Ile Thr His Gln Ala Ile
3981 545          550          555          560
3983 Val Thr Leu Ser Thr Val Ile Thr Arg Ser Arg Val Met Ile Gln Val
3984          565          570          575
3986 Val Ser Leu Ile Gly Arg Thr Arg Ile Pro Tyr Pro Asn Pro Val Phe
3987          580          585          590
3989 Ser Thr Leu Leu Ala Tyr Pro Ser Leu Phe Leu Leu Leu Lys Glu
3990          595          600          605
3992 Phe Lys Ser Lys Gln Ile Gln Asn Asn Thr Val Arg His Cys Asp Met
3993          610          615          620
3995 Leu Val Ser Gly Lys His Phe Ala His Pro Gln Thr Ser Ser Ala Ser
3996 625          630          635          640
3998 Ser Pro Thr Phe Ser Tyr Ile Thr Met Ser His Gly Phe Val Asp Asp
3999          645          650          655
4001 Arg Pro Pro Gln Ala Cys Leu Trp Leu Cys Leu Thr Glu Arg Glu Arg
4002          660          665          670
4004 Gln Thr Asp Ser Leu Leu Ile His Tyr Gly Asp Pro Ile Ala Ser Phe
4005          675          680          685
4007 Ala Ala Val Ile Cys Val Pro Asp Ala Cys Ala His Gly Lys Thr Ala
4008          690          695          700
4010 Gly Pro Ala Gln Leu Met His Trp Arg Leu Leu Gly Thr Lys His Arg
4011 705          710          715          720
4013 Arg Gly Lys Leu Ser Arg Cys Leu Cys His Arg Gln Leu Arg Ile Arg
4014          725          730          735
4016 Glu His Arg His Pro Phe Gln Val Trp His Gly Pro Asn Ser Arg Asp
4017          740          745          750
4019 Gln Pro Arg Arg Pro Leu Pro Ser Glu Gln Arg Leu Arg Ala Leu Glu
4022          755          760          765
4024 Gln Arg Asn Pro Val Leu Pro Gly Ala Trp Arg Gln Gly Asp Ala Leu
4025          770          775          780
4027 His Arg Arg Trp Arg Val Leu Trp Pro Glu Phe His Arg Arg Arg Gln
4028 785          790          795          800
4030 Gly Arg Ser Val Ile Pro Leu Ala Gln Phe Leu Gly Trp Phe Cys Cys
4031          805          810          815
4033 Ser Leu Leu Glu Thr Pro Arg Gly Cys Gly Ser Gly Trp His Arg Leu
4034          820          825          830
4036 Gln His Arg Arg Arg Glu His Arg Thr Leu Thr Cys Arg Phe Pro Gln
4037          835          840          845
4039 Gly Leu Gln Arg Ala Gly Gly Arg Asn Glu Glu Ser Ser Leu Glu Cys
4040          850          855          860
4042 Ser Ser Ala Val Ser Phe Pro Gly Leu Leu Ala Trp Gln Arg Thr Gln
4043 865          870          875          880
4045 Asn Arg Ser Leu Arg Leu Arg Val Gly Ala Val Leu Gln Gln Pro Phe
4046          885          890          895
4048 Val Pro Phe Leu Pro Glu Arg Tyr Gln Ser Cys Lys Cys Val Gln Gln

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

4049          900          905          910
4051 Leu Gly His Val His Pro Cys Ala Lys Ala Val Pro Trp Ala Ser Cys
4052          915          920          925
4054 Cys Ser Gly Cys Ser Asn Trp Trp Leu His Ser Thr Pro Ser His Ile
4055          930          935          940
4057 Ser Ser Ser Asp Pro Lys Gly Phe Arg Gln Val Arg Arg Asn His Ala
4058 945          950          955          960
4060 Val Asp Ile Pro Arg Gln Lys Leu Arg Leu Gln Phe Ser Ser Gln Val
4061          965          970          975
4063 Pro Arg Val Ser Ser Ala Ser Val Leu Gln His Leu Ile Tyr Ala Gly
4064          980          985          990
4066 Glu Val Phe Gln Val Asn Leu Asn Gly Val Asp Asp Arg Trp Ser Lys
4067          995          1000          1005
4069 Thr Pro Ile Ile Met Gly Pro His Pro Tyr Pro Cys Val Ala Thr Leu
4070 1010          1015          1020
4072 Trp Cys Phe Pro Cys Met Leu Val Phe Ser Ile Ile Gly Val Ser Phe
4073 1025          1030          1035          1040
4075 Thr Phe Pro Tyr Phe Pro Cys Ser Lys Thr Val Tyr Leu Leu Pro Leu
4076          1045          1050          1055
4078 Pro Asn Leu Lys Lys Ile Lys Ile Tyr Asn Lys Tyr Pro Leu Phe Phe
4079          1060          1065          1070
4082 Phe Phe Arg Gln Ile Tyr Asn Ser Leu Ser Gln Leu Phe Lys Gln Lys
4083          1075          1080          1085
4085 Ile Ile Leu Phe His Thr Lys Asp Glu Ser Met Ile Ala Gly Leu Leu
4086 1090          1095          1100
4088 Ser Thr Gly Ala Glu Met Ala Thr Arg Glu Ala Cys Ala Thr Cys Asn
4089 1105          1110          1115          1120
4091 Tyr Lys Phe Val Asn Ile Val Phe Leu Ala Met Phe Gly Asp Ala Ile
4092          1125          1130          1135
4094 Leu Pro Ser Gly His Thr Ser Gly Thr Val Ser Trp Glu Val Asn Leu
4095          1140          1145          1150
4097 Leu Leu Gly Ser Ser Ala Thr Asn Leu Val Arg Phe Phe Ser Met Val
4098          1155          1160          1165
E--> 4100 Ser Thr Ser Thr Ser Lys Val Tyr Leu Ser Ala Xaa Pro Gln Phe Arg
4101          1170          1175          1180
4103 Leu Arg Val Gly Ala Val Leu Leu His Arg Gln Leu Ala Asp Ala Arg
4104 1185          1190          1195          1200
4106 Gln Trp Val Leu His Pro Ala Trp Lys Val Phe Pro Gly Leu Pro Ala
4107          1205          1210          1215
4109 Ala Pro Gln Ala Ala Gly Arg Ser Ser Ile Pro Leu Val Ile Leu His
4110          1220          1225          1230
4112 Val Ser Tyr His Gln Glu Leu Gln Val Pro Arg Asp Tyr Asn Lys Lys
4113          1235          1240          1245
4115 Lys Gly Lys Asn Gly Asn Asn Asn Asn Arg Pro Arg Thr Phe Arg Val
4116          1250          1255          1260
4118 Lys Thr Asn Asp Ser Met Arg Arg Phe Ala Met Asp Met Asp Arg Ser
4119 1265          1270          1275          1280
4121 Gln Ser Ser Pro Ser Leu Tyr Glu Pro Val Tyr Arg Phe Ser Leu Gln
4122          1285          1290          1295

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RAW SEQUENCE LISTING
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DATE: 03/20/2003
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Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

E--> 4124 Glu Pro Arg Gly Pro Ala Gln Glu Lys Gln Gln Ile Val Val Ser Phe
4125 1300 1305 1310
4127 Xaa Tyr Lys Pro Asn Gly Ala Val Arg Gln Met Leu Asn Gly Arg Arg
4128 1315 1320 1325
4130 Ile Asp Leu Gln Ser Lys Ser Glu Glu Asn Arg Ser Gly Pro Pro Thr
4131 1330 1335 1340
4133 Thr Thr His Ala Ile Arg Pro Leu Pro His Pro Leu His Leu Phe Leu
4134 1345 1350 1355 1360
4136 Leu Pro Leu Leu Arg Ser Val Ile Phe Cys Val Tyr Pro Ile Ser Phe
4137 1365 1370 1375
4139 Leu Glu Trp Tyr Pro Ile Leu Ile Ser Ile Val Val Leu Asn His Gln
4142 1380 1385 1390
4144 Phe Trp Phe Lys Arg Met Met Ala Glu Ser Phe Gly Arg Trp Glu Ser
4145 1395 1400 1405
4147 Asp Pro Leu Phe Ser Ala Ala Glu Val Val Gln Asp Ser Ala Asp Arg
4148 1410 1415 1420
4150 Phe Phe Leu Ser Phe Ala Gln Leu Cys Gly His Ser Cys Ala Leu Glu
4151 1425 1430 1435 1440
4153 Asn Leu Leu Tyr Phe Glu Arg Asn Cys Cys Phe Leu Val Leu Ile Ser
4154 1445 1450 1455
4156 Pro Tyr Lys Ile Cys Phe Arg Phe Ile Ser Glu Asn Val Val Ser Ser
4157 1460 1465 1470
4159 Met Thr Ile Leu Phe Asn Ser Asn Thr Leu Ser Cys Phe Leu Phe Asn
4160 1475 1480 1485
4162 Gly Glu Asn Ile Val Pro Phe Ser Asp Leu Cys Ser Pro Asp His Asp
4163 1490 1495 1500
4165 Glu Gly Arg Lys Tyr Phe Leu Val Ile Phe Leu Ser Lys Phe Phe Gln
4166 1505 1510 1515 1520
4168 Thr Arg His Lys Tyr Asn Tyr Arg Pro Arg Leu Ile Leu Leu Met His
4169 1525 1530 1535
4171 Arg Phe Ser Leu Pro Phe Pro Leu Cys Tyr Gly Tyr Arg Cys Tyr Trp
4172 1540 1545 1550
4174 Leu Leu Asn Ser Trp Gly Ser Ala Trp Val Ile Arg Pro Ala Gly Arg
4175 1555 1560 1565
4181 <210> SEQ ID NO: 30
4182 <211> LENGTH: 1574
4183 <212> TYPE: PRT
4184 <213> ORGANISM: Musa acuminata
4186 <400> SEQUENCE: 30
4187 Asp Pro Asn Phe Glu Trp Ile Leu Lys Phe Leu Val Gln Ser Lys Asn
4188 1 5 10 15
4190 Leu Tyr Gln Glu Leu Val His His Pro Asn Gly Val His Val Ser Asp
4191 20 25 30
4193 Gly Leu Thr Trp Phe His Ser Glu Lys Phe Glu Arg Val His Lys Asn
4194 35 40 45
4196 Ile Asp Phe Gly Phe Phe His Ser Val Gly Ala Phe Met Ser Asp Leu
4197 50 55 60
4199 Lys Ser Pro Pro Asn Ile Lys Ser Arg Ile Thr Asn Asn Val Ile Glu
4202 65 70 75 80

pr 24,26,27

RAW SEQUENCE LISTING

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PATENT APPLICATION: US/09/892,635

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Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

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4204 Phe Ile Phe Val Cys Thr Lys Gln Gly Ile His Ser Leu Cys Val Ser
4205                85                90                95
4207 Lys Asn Ile Leu Leu Arg Phe Ile Pro Phe Ala His Arg Lys Arg Lys
4208                100                105                110
4210 Phe Leu Lys Ser Ile Phe Asp Asn Arg Pro Lys Leu Glu Ile His Gly
4211                115                120                125
4213 Asn Glu Glu Asp Pro His Met Ser Phe Pro Ile His Val Ile Arg Leu
4214                130                135                140
E--> 4216 Ile Lys His Arg Trp Met Cys Asn Glu Met Thr Leu Met Xaa Tyr Leu
4217 145                150                155                160
4219 Ser Trp Val Leu Asn Gln Ile Glu Ala Leu Leu Tyr Gln Leu Leu Gly
4220                165                170                175
4222 Ser Glu Trp His Glu Arg Gly Gly Val Asn Cys Ser Gly Leu Lys Leu
4223                180                185                190
4225 Ile Ser Leu Lys Met Asn Ser Ile Arg Glu Asp Phe Val Leu Ile Val
4226                195                200                205
4228 Thr Val Asp Glu Asn Gln Lys Leu Thr Val Val Ile Thr Ile Ser Gly
4229                210                215                220
4231 Lys Glu Leu Thr His Ser Arg Asn Ile Pro Ile Ser Gly Ser Val Lys
4232 225                230                235                240
4234 Met Thr Tyr Ile His Leu Ser Leu Leu Arg Arg Gly Ser Gln Leu Pro
4235                245                250                255
E--> 4237 Leu Ala Asn His Phe Glu Gly Glu Gly Gln Ile Pro Leu Leu Xaa Pro
4238                260                265                270
4240 Phe Thr Met Val His Thr Leu Thr Asn Phe Gln Arg Glu Arg Arg Arg
4241                275                280                285
4243 Thr Cys Lys Gln Leu Lys Thr Arg Leu Ala Lys Asp Phe Ala Lys Ala
4244                290                295                300
4246 Phe Phe Leu Asn Leu Leu Leu Leu Lys Ser Cys Ile Leu Cys Glu Leu
4247 305                310                315                320
4249 Arg Gly Ile Tyr Arg Pro Gln Glu Asp Leu Asn Leu Gly Ser Lys Phe
4250                325                330                335
4252 Arg Met Leu Leu Gly Ser Arg Gly Cys Arg Cys His Arg Leu Ser Val
4253                340                345                350
4255 Phe Asp Thr Gly Gln Cys Thr Ser Gly Ala Thr Ala Gly Pro Leu Gly
4256                355                360                365
4258 Cys Trp Ala Val Pro Pro Pro Arg Leu Phe Gln Leu Thr Gly Trp Ile
4259                370                375                380
4262 Pro Asn Leu Thr Gln Thr Ser Pro Asn Ser Gly Pro Ile Asp Pro Pro
4263 385                390                395                400
4265 Asp Tyr Arg Ile Asn Pro Ser Pro Leu Tyr Ala Asn Tyr Ala Thr Glu
4266                405                410                415
4268 Asn Ile Val Leu Ser Lys Phe Leu Thr Gly Lys Arg Arg Val Phe Phe
4269                420                425                430
4271 Arg Arg Ser Phe Gly Arg Leu Leu Ile Tyr Leu Trp Ile Ser Ser Ser
4272                435                440                445
4274 Gly Leu Leu Val Gly Ser Arg Ser Cys Gly Glu Phe Ser Glu Pro Asn
4275                450                455                460
4277 Leu Leu Gly Asp Leu Arg Lys Pro Pro Met Ile Ser Ser Ala Asp Phe

```

same

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

4278 465                               470                               475                               480
4280 Arg Lys Leu Arg Gln Val Pro Asp Phe Phe Ser Val Gly Ser Asp Ser
4281                               485                               490                               495
4283 Ile Ser Asn Glu Thr Ser Asp Ser Leu Asn Val His Arg Thr Leu Arg
4284                               500                               505                               510
4286 Ala Cys Phe Ile Phe Ser Gly Tyr His Ser Ser Tyr Ile Leu Asn Ser
4287                               515                               520                               525
4289 Ile Ile Trp Ile Arg Leu Ile Asn Pro Ser Ile Asp Phe Ile Ile Lys
4290                               530                               535                               540
4292 Ile Arg His Ser Thr Asn Ile Arg Thr Gln Pro Ile Arg Leu Leu Arg
4293 545                               550                               555                               560
4295 Asp Tyr Leu Leu Ser Val Arg Glu Val Ser Glu Ser Ser Arg Ser Cys
4296                               565                               570                               575
4298 His Leu Leu Ala Glu His Val Ser Leu Ile Gln Ile Gln Ser Ser Gln
4299                               580                               585                               590
4301 Leu Phe Pro Thr Arg Leu Phe Phe Tyr Tyr Phe Lys Asn Ser Asn Gln
4302                               595                               600                               605
4304 Asn Arg Tyr Lys Ile Thr Arg Asp Thr Val Thr Cys Ser Leu Glu Ser
4305                               610                               615                               620
4307 Ile Asn Ser Arg Ile His Arg Arg Arg Gln Leu His His Pro Leu Phe
4308 625                               630                               635                               640
4310 Pro Thr Pro Cys Arg Met Ala Leu Leu Met Thr Asp His His Lys Leu
4311                               645                               650                               655
4313 Ala Phe Gly Cys Ala Gln Arg Glu Arg Asp Arg Pro Ile Ala Ser Ser
4314                               660                               665                               670
4316 Phe Thr Met Ala Ile Arg Ser Pro Ala Ser Leu Leu Leu Phe Ala Phe
4317                               675                               680                               685
4319 Leu Met Leu Ala Leu Thr Gly Arg Leu Gln Ala Arg Arg Ser Ser Cys
4322                               690                               695                               700
4324 Ile Gly Val Tyr Trp Gly Gln Asn Thr Asp Glu Gly Ser Leu Ala Asp
4325 705                               710                               715                               720
4327 Ala Cys Ala Thr Gly Asn Tyr Glu Tyr Val Asn Ile Ala Thr Leu Phe
4328                               725                               730                               735
4330 Lys Phe Gly Met Gly Gln Thr Pro Glu Ile Asn Leu Ala Gly His Cys
4331                               740                               745                               750
4333 Asp Pro Arg Asn Asn Gly Cys Ala Arg Leu Ser Ser Glu Ile Gln Ser
4334                               755                               760                               765
4336 Cys Gln Glu Arg Gly Val Lys Val Met Leu Ser Ile Gly Gly Gly Gly
4337                               770                               775                               780
4339 Ser Tyr Gly Leu Ser Ser Thr Glu Asp Ala Lys Asp Val Ala Ser Tyr
4340 785                               790                               795                               800
4342 Leu Trp His Ser Phe Leu Gly Gly Ser Ala Ala Arg Tyr Ser Arg Pro
4343                               805                               810                               815
4345 Leu Gly Asp Ala Val Leu Asp Gly Ile Asp Phe Asn Ile Ala Gly Gly
4346                               820                               825                               830
4348 Ser Thr Glu His Tyr Asp Glu Leu Ala Ala Phe Leu Lys Ala Tyr Asn
4349                               835                               840                               845
4351 Glu Gln Glu Ala Gly Thr Lys Lys Val His Leu Ser Ala Arg Pro Gln
4352                               850                               855                               860

```

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
 TIME: 11:22:24

Input Set : A:\pto.amc.txt
 Output Set: N:\CRF4\03202003\I892635.raw

4354 Cys Pro Phe Pro Asp Tyr Trp Leu Gly Asn Ala Leu Arg Thr Asp Leu
 4355 865 870 875 880
 4357 Phe Asp Phe Val Trp Val Gln Phe Phe Asn Asn Pro Ser Cys His Phe
 4358 885 890 895
 4360 Ser Gln Asn Ala Ile Asn Leu Ala Asn Ala Phe Asn Asn Trp Val Met
 4361 900 905 910
 4363 Ser Ile Pro Ala Gln Lys Leu Phe Leu Gly Leu Pro Ala Ala Pro Glu
 4364 915 920 925
 4366 Ala Ala Pro Thr Gly Gly Tyr Ile Pro Pro His Asp Leu Ile Ser Lys
 4367 930 935 940
 4369 Val Leu Pro Ile Leu Lys Asp Ser Asp Lys Tyr Ala Gly Ile Met Leu
 4370 945 950 955 960
 4372 Trp Thr Arg Tyr His Asp Arg Asn Ser Gly Tyr Ser Ser Gln Val Lys
 4373 965 970 975
 4375 Ser His Val Cys Pro Ala Arg Arg Phe Ser Asn Ile Leu Ser Met Pro
 4376 980 985 990
 4378 Val Lys Ser Ser Lys Thr Thr Ala Met Ile Gly Gly Arg Lys Leu Arg
 4379 995 1000 1005
 4382 Ser Ser Trp Val Pro Ile Arg Ile Arg Ala Leu Leu Arg Tyr Gly Val
 4383 1010 1015 1020
 4385 Ser Leu Val Cys Trp Ser Phe Gln Tyr Asn Lys Gly Leu Val Leu Arg
 4386 1025 1030 1035 1040
 4388 Phe His Ile Phe His Val Arg Lys Gln Tyr Ile Cys Cys Pro Phe Gln
 4389 1045 1050 1055
 4391 Ile Lys Arg Asn Lys Tyr Ile Thr Lys Asn Ile Leu Phe Phe Ser
 4392 1060 1065 1070
 4394 Phe Asp Lys Tyr Ile Thr Leu Asn Phe Pro Asn Cys Leu Ser Lys Arg
 4395 1075 1080 1085
 4397 Tyr Lys Ser Ser Ser Thr Gln Lys Thr Asn Pro Leu Leu Asp Cys Cys
 4398 1090 1095 1100
 4400 Leu Leu Val Pro Lys Trp Arg Arg Glu Lys Leu Val Leu Pro Ala Ile
 4401 1105 1110 1115 1120
 4403 Thr Ser Ser Ser Thr Leu Ser Ser Leu Pro Cys Leu Val Thr Pro Tyr
 4404 1125 1130 1135
 4406 Ser Arg Asp Gln Asp Thr Pro Leu Glu Gln Phe Leu Gly Lys Leu Ile
 4407 1140 1145 1150
 4409 Phe Phe Ser Ala Pro Arg Arg Pro Ile Leu Gly Ser Ser Pro Glu Trp
 4410 1155 1160 1165
 E--> 4412 Cys Pro Leu Arg His Arg Arg Ser Thr Ala Xaa Ile His Ser Ser Asp
 4413 1170 1175 1180
 4415 Tyr Val Trp Val Gln Phe Tyr Tyr Thr Gly Asn Ser Gln Met Pro Gly
 4416 1185 1190 1195 1200
 4418 Asn Asn Gly Phe Ser Ile Leu His Gly Arg Cys Ser Leu Asp Phe Leu
 4419 1205 1210 1215
 4421 Leu Leu Leu Arg Leu Leu Glu Gly Ala Pro Phe His Ser Tyr Thr Cys
 4422 1220 1225 1230
 4424 Leu Ile Ile Lys Asn Tyr Ser Lys Tyr Arg Gly Ile Ile Lys Ile Lys
 4425 1235 1240 1245
 4427 Lys Lys Gly Arg Met Gly Ile Arg Ile Lys Thr Glu Thr Gly His Glu

same

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

4428 1250 1255 1260
 4430 Glu Arg Phe Glu Arg Gln Thr Thr Val Asp Gly Ser Leu Leu Trp Thr
 4431 1265 1270 1275 1280
 4433 Trp Ile Val Pro Lys Ala Val Gln Val Phe Met Asn Arg Ser Ile Gly
 4434 1285 1290 1295
 4436 Ser Ala Phe Lys Asn Arg Glu Asp Asn Arg Pro Lys Arg Asn Asn Lys
 4437 1300 1305 1310
 E--> 4439 Leu Trp Ala Phe Xaa Ile Asn Arg Thr Val Pro Ser Val Arg Cys Met *none*
 4442 1315 1320 1325
 4444 Asp Gly Gly Ile Ser Arg Val Asn Leu Arg Lys Ile Val Pro Ala Pro
 4445 1330 1335 1340
 4447 Leu Pro Arg Pro Thr Arg Ser Val Leu Ser Pro Thr Pro Tyr Thr Phe
 4448 1345 1350 1355 1360
 4450 Phe Phe Phe Arg Ser Cys Asp Arg Leu Phe Asp Phe Val Tyr Asp Ile
 4451 1365 1370 1375
 4453 Gln Phe Leu Phe Trp Ser Gly Ile Leu Phe Phe Leu Arg Leu Leu Tyr
 4454 1380 1385 1390
 4456 Thr Ile Ser Phe Gly Leu Ser Ala Trp Arg Arg Val Ser Gly Asp Gly
 4457 1395 1400 1405
 4459 Ser Gln Ile Pro Cys Phe Leu Leu Pro Lys Trp Cys Lys Ile Arg Pro
 4460 1410 1415 1420
 4462 Ile Gly Phe Phe Ser His Phe Lys Leu Asn Tyr Ala Val Ile Leu Val
 4463 1425 1430 1435 1440
 4465 Arg Leu Trp Arg Ile Cys Ser Ile Ser Lys Glu Ile Ala Ala Phe Phe
 4466 1445 1450 1455
 4468 Leu Val Pro Ile Lys Phe Ala Phe Gly Ser Glu Tyr Pro Arg Met Ser
 4469 1460 1465 1470
 4471 Tyr Arg Gln Arg Phe Phe Phe Arg Ile Leu Ile Leu Cys Pro Val Phe
 4472 1475 1480 1485
 4474 Cys Asp Leu Met Glu Lys Ile Leu Phe Leu Leu Val Ile Tyr Ala Leu
 4475 1490 1495 1500
 4477 Pro Thr Ile Arg Met Arg Val Glu Gly Glu Asn Thr Phe Trp Phe Ser
 4478 1505 1510 1515 1520
 4480 Ser Leu Asn Ser Ser Lys His Asp Thr Ser Ile Ile Ile Asp Gln Asp
 4481 1525 1530 1535
 4483 Phe Phe Leu Cys Thr Asp Ser His Phe Pro Ser Leu Cys Val Met Val
 4484 1540 1545 1550
 4486 Ile Val Val Thr Asp Gly Cys Leu Thr His Gly Val Ala Pro Gly Ser
 4487 1555 1560 1565
 4489 Val Asp Leu Gln Val Asp
 4490 1570
 4493 <210> SEQ ID NO: 31
 4494 <211> LENGTH: 1562
 4495 <212> TYPE: PRT
 4496 <213> ORGANISM: Musa acuminata
 4498 <400> SEQUENCE: 31
 4499 Arg Ile Pro Thr Phe Arg Asn Gly Ser Asn Phe Ser Tyr Lys Phe Lys
 4502 1 5 10 15
 4504 Val Arg Lys Ile Phe Thr Lys Ser Phe Glu Ser Ile Asp Asp Ile Arg

28,30-31
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RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
 TIME: 11:22:24

Input Set : A:\pto.amc.txt
 Output Set: N:\CRF4\03202003\I892635.raw

```

4505          20          25          30
4507 Glu Thr Val Tyr Met Ser Pro Met Asp Ser Leu Gly Phe Ile Arg Lys
4508          35          40          45
4510 Ser Ser Lys Glu Cys Ile Arg Ile Leu Ile Leu Asp Ser Phe Thr Arg
4511          50          55          60
4513 Leu Val Pro Ser Val Thr Ser Arg Val Leu Gln Ile Ser Lys Ala Glu
4514 65          70          75          80
4516 Ser Gln Ile Glu Met Leu Asn Ser Phe Leu Ser Asn Ala Gln Asn Arg
4517          85          90          95
4519 Ala Phe Ile Ala Phe Val Phe Lys Ala Lys Thr Phe Phe Ser Asp Ser
4520          100         105         110
4522 Ser His Ser Leu Ile Gly Arg Glu Asn Phe Asn Pro Phe Ser Thr Ile
4523          115         120         125
4525 Asp Gln Ser Ser Lys Ser Met Glu Met Arg Lys Ile Leu Ile Val Phe
4526          130         135         140
4528 Gln Tyr Met Phe Asp Ser Leu Asn Ile Gly Gly Cys Val Met Lys Pro
4529 145          150         155         160
E--> 4531 Ser Cys Xaa Ile Ser Leu Gly Tyr Thr Lys Tyr Glu Ser Glu Pro Cys
4532          165         170         175
4534 Ser Asp Thr Asn Cys Asp Gln Ser Gly Thr Lys Arg Gly Gly Glu Ile
4535          180         185         190
4537 Ser Ala Val Asp Asn Leu Val Lys Ile Arg Lys Tyr Glu Lys Ile Ser
4538          195         200         205
4540 Phe Leu Glu Met Lys Thr Lys Ser Gln Cys Lys Gln Phe Arg Glu Ser
4541          210         215         220
4543 Lys Asn Ser His Ile Gln Gly Thr Tyr Gln Phe Lys Val Val Arg Ser
4544 225          230         235         240
4546 Lys Pro Thr Ser Thr Cys Glu Ala Phe Phe Glu Glu Ala Pro Asn Phe
4547          245         250         255
E--> 4549 His Gln Ile Thr Leu Lys Gly Lys Asp Lys Tyr Leu Ser Tyr Xaa Leu
4550          260         265         270
4552 Leu Gln Trp Phe Ile Leu Leu Gln Ile Phe Asn Glu Lys Glu Gly Gly
4553          275         280         285
4555 Glu His Ala Ser Asn Lys Gln Asp Leu Leu Lys Thr Leu Leu Arg Leu
4556          290         295         300
4558 Phe Phe Ser Ile Tyr Cys Phe Ser Lys Val Val Phe Ser Ala Glu Asn
4559 305          310         315         320
4562 Gly Val Phe Ile Asp Pro Lys Arg Ile Ile Trp Ala Pro Asn Phe Glu
4563          325         330         335
4565 Cys Ser Trp Val Pro Glu Val Ala Gly Ala Thr Ala Cys Gln Cys Leu
4566          340         345         350
4568 Thr Leu Asp Ser Val Leu Ala Val Pro Pro Pro Asp Leu Ser Gly Val
4569          355         360         365
4571 Gly Arg Cys His Arg Leu Asp Phe Phe Ser Ser Leu Val Gly Phe Gln
4572          370         375         380
4574 Thr Pro Lys Pro Val Arg Thr Arg Val Gln Leu Thr Arg Asn Arg Ile
4575 385          390         395         400
4577 Ile Gly Leu Thr Leu Asn Pro Asn Pro Asn Tyr Met Gln Thr Thr Gln
4578          405         410         415

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

4580 Leu Lys Ile Ser Ala Ser Phe Pro Ala Asn Val Glu Ser Ser Ser Gly
4581           420           425           430
4583 Asp Leu Ser Ala Asp Phe Tyr Thr Phe Gly Phe Leu Leu Ala Asp Ser
4584           435           440           445
4586 Gly Pro Asp Leu Val Ala Ser Leu Ala Ser Ser Arg Thr Phe Ser Val
4587           450           455           460
4589 Ile Ser Ala Asn Arg Arg Ser Leu Arg Gln Thr Phe Glu Asn Phe Asp
4590 465           470           475           480
4592 Lys Ser Pro Ile Ser Ser Arg Leu Val Pro Thr Ala Ser Leu Thr Lys
4593           485           490           495
4595 Leu Arg Thr Pro Met Ser Ile Glu Leu Asp Ser Gly Arg Leu Ala Leu
4596           500           505           510
4598 Tyr Phe Gln Ala Ile Ile Val Asn Pro Thr Tyr Leu Thr Gln Tyr Gly
4599           515           520           525
4601 Leu Asp Leu Thr His Gln Leu Ile Ser Ser Ser Lys Phe Asp Ile Gln
4602           530           535           540
4604 Gln Thr Ser Val Leu Asn Asn Pro Ser Gly Tyr Ser Tyr Val Thr Ile
4605 545           550           555           560
4607 Tyr Cys Asp Pro Tyr Val Lys Leu Ala Ser His Asp Pro Gly Arg Val
4608           565           570           575
4610 Thr Tyr Trp Pro Asn Thr Tyr Pro Leu Ser Lys Ser Ser Leu Leu Asn
4611           580           585           590
4613 Ser Ser Ser Leu Pro Val Ser Phe Phe Ile Thr Phe Glu Arg Ile Gln
4614           595           600           605
4616 Ile Lys Thr Asp Thr Lys His Gly Glu Thr Leu His Ala Ser Leu Trp
4617           610           615           620
4619 Lys Ala Leu Ile Arg Ala Ser Thr Asp Val Val Ser Phe Ile Thr His
4622 625           630           635           640
4624 Phe Phe Leu His Asn His Val Ala Trp Leu Cys Gln Thr Thr Thr Ser
4625           645           650           655
4627 Leu Pro Leu Val Val Pro Asn Arg Glu Arg Glu Thr Asp Arg Pro Pro
4628           660           665           670
4630 His Ser Leu Trp Arg Ser Asp Arg Gln Leu Arg Cys Cys Tyr Leu Arg
4631           675           680           685
4633 Ser Cys Leu Arg Ser Arg Glu Asp Cys Arg Pro Gly Ala Ala His Ala
4634           690           695           700
4636 Leu Ala Ser Thr Gly Lys Thr Pro Thr Arg Glu Ala Gln Met Leu Val
4637 705           710           715           720
4639 Pro Gln Ala Thr Thr Asn Thr Thr Ser Pro Pro Phe Ser Ser Leu Ala
4640           725           730           735
4642 Trp Ala Lys Leu Gln Arg Ser Thr Ser Pro Ala Thr Val Thr Leu Gly
4643           740           745           750
4645 Thr Thr Ala Ala Arg Ala Ala Ala Lys Ser Ser Pro Ala Arg Ser Val
4646           755           760           765
4648 Ala Ser Arg Cys Ser Pro Ser Glu Val Ala Gly Leu Met Ala Val Pro
4649           770           775           780
4651 Pro Lys Thr Pro Arg Thr Arg His Thr Ser Gly Thr Val Ser Trp Val
4652 785           790           795           800
4654 Val Leu Leu Leu Ala Thr Arg Asp Pro Ser Gly Met Arg Phe Trp Met

```

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

4655          805          810          815
4657 Ala Thr Ser Thr Ser Pro Glu Gly Ala Gln Asn Thr Met Met Asn Leu
4658          820          825          830
4660 Pro Leu Ser Ser Arg Pro Thr Thr Ser Arg Arg Pro Glu Arg Arg Lys
4661          835          840          845
4663 Phe Thr Val Leu Val Arg Ser Val Leu Ser Arg Ile Thr Gly Leu Ala
4664          850          855          860
4666 Thr His Ser Glu Gln Ile Ser Ser Thr Ser Cys Gly Cys Ser Ser Ser
4667 865          870          875          880
4669 Thr Thr Leu Arg Ala Ile Ser Pro Arg Thr Leu Ser Ile Leu Gln Met
4670          885          890          895
4672 Arg Ser Thr Ile Gly Ser Cys Pro Ser Leu Arg Lys Ser Cys Ser Leu
4673          900          905          910
4675 Gly Phe Leu Leu Leu Leu Arg Leu Leu Gln Leu Val Ala Thr Phe His
4676          915          920          925
4678 Pro Met Ile Ser Tyr Leu Lys Phe Phe Arg Ser Arg Ile Pro Thr Ser
4679          930          935          940
4682 Thr Gln Glu Ser Cys Cys Gly Leu Asp Thr Thr Thr Glu Thr Pro Ala
4683 945          950          955          960
4685 Thr Val Leu Lys Ser Ser Pro Thr Cys Val Gln Arg Val Gly Ser Pro
4686          965          970          975
4688 Thr Ser Tyr Leu Cys Arg Ser Leu Pro Ser Lys Pro Glu Arg Arg Arg
4689          980          985          990
4691 Ser Val Val Glu Asn Ser Asp His His Gly Ser Pro Ser Val Ser Val
4692          995          1000          1005
4694 Arg Cys Tyr Val Met Val Phe Pro Leu Tyr Val Gly Leu Phe Asn Asn
4695          1010          1015          1020
4697 Ile Ile Arg Gly Phe Tyr Val Ser Ile Phe Ser Met Phe Glu Asn Ser
4698 1025          1030          1035          1040
4700 Ile Phe Ala Ala Pro Ser Lys Phe Glu Lys Asp Lys Ile Asn Ile Leu
4701          1045          1050          1055
4703 Lys Ile Ser Ser Phe Phe Phe Leu Ser Thr Asn Ile Leu Leu Thr Phe
4704          1060          1065          1070
4706 Pro Ile Val Ala Lys Asp Ile Asn Pro Leu Pro His Lys Arg Arg Ile
4707          1075          1080          1085
4709 His Asp Cys Trp Ile Ala Val Tyr Trp Cys Arg Asn Gly Asp Glu Arg
4710          1090          1095          1100
4712 Ser Leu Cys Tyr Leu Gln Leu Gln Val Arg Gln His Cys Leu Pro Cys
4713 1105          1110          1115          1120
4715 His Val Trp Arg His Thr Pro Val Ile Arg Thr His Leu Trp Asn Ser
4716          1125          1130          1135
4718 Phe Leu Gly Ser Ser Ser Ser Arg Leu Leu Gly Asp Gln Ser Cys Glu
4719          1140          1145          1150
4721 Val Leu Leu Leu Asn Gly Val His Phe Asp Ile Glu Gly Leu Pro Glu
4722          1155          1160          1165
E--> 4724 Arg Xaa Ser Thr Val Pro Thr Thr Cys Gly Cys Ser Ser Thr Thr Gln
4725          1170          1175          1180
4727 Ala Thr Arg Arg Cys Pro Val Thr Met Gly Ser Pro Ser Cys Met Glu
4728 1185          1190          1195          1200

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RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

4730 Gly Val Pro Trp Thr Ser Cys Cys Ser Ser Gly Cys Trp Lys Glu Leu
4731                1205                1210                1215
4733 His Ser Thr Ser Asp Leu Thr Arg Val Leu Ser Ser Arg Ile Ile Ala
4734                1220                1225                1230
4736 Ser Thr Glu Gly Leu Leu Lys Lys Lys Arg Glu Glu Trp Glu Leu Glu
4737                1235                1240                1245
4739 Leu Lys Leu Lys Pro Ala Met Lys Asn Val Ser Ser Glu Asp Lys Arg
4742                1250                1255                1260
4744 Gln Tyr Glu Thr Val Val Cys Tyr Gly His Gly Ser Phe Pro Lys Gln
4745 1265                1270                1275                1280
4747 Ser Lys Ser Leu Thr Gly Leu Ser Val Gln Pro Ser Arg Thr Ala Arg
4748                1285                1290                1295
E--> 4750 Ile Thr Gly Pro Arg Glu Thr Thr Asn Cys Gly Glu Leu Leu Xaa Thr
4751                1300                1305                1310
4753 Glu Arg Cys Arg Pro Ser Asp Val Lys Trp Thr Ala Asp Arg Ser Pro
4754                1315                1320                1325
4756 Glu Ile Gly Lys Ser Phe Arg Pro Pro Tyr His Asp Pro Arg Asp Pro
4757                1330                1335                1340
4759 Ser Ser Pro Pro Pro Pro Thr Pro Phe Ser Ser Ser Ala Pro Ala Ile
4760 1345                1350                1355                1360
4762 Gly Tyr Leu Ile Leu Cys Met Ile Ser Asn Phe Phe Ser Gly Val Val
4763                1365                1370                1375
4765 Ser Tyr Ser Asn Phe Leu Asp Cys Cys Ile Glu Pro Ser Val Leu Val
4766                1380                1385                1390
4768 Ala His Asp Gly Gly Glu Phe Arg Glu Met Gly Val Arg Ser Leu Val
4769                1395                1400                1405
4771 Phe Cys Cys Arg Ser Gly Ala Arg Phe Gly Arg Val Phe Ser Leu Ile
4772                1410                1415                1420
4774 Leu Ser Ser Ile Met Arg Ser Phe Leu Leu Gly Phe Gly Glu Phe Ala
4775 1425                1430                1435                1440
4777 Leu Phe Arg Lys Lys Leu Leu Leu Ser Ser Phe Asp Ser Leu Asn Leu
4778                1445                1450                1455
4780 Leu Ser Val Leu Asn Ile Arg Glu Cys Arg Ile Val Asn Asp Asp Ser
4781                1460                1465                1470
4783 Phe Leu Glu Phe Tyr Phe Val Leu Phe Ser Val Ile Trp Arg Lys Tyr
4784                1475                1480                1485
4786 Cys Ser Phe Ser Met Leu Ser Arg Pro Leu Gly Gly Leu Lys Val Lys
4787                1490                1495                1500
4789 Ile Leu Ser Gly Asn Phe Pro Leu Ile Leu Pro Asn Thr Thr Gln Val
4790 1505                1510                1515                1520
4792 Leu Thr Lys Ile Asp Ser Ser Tyr Ala Pro Ile Leu Thr Ser Leu Pro
4793                1525                1530                1535
4795 Ser Val Leu Trp Leu Ser Leu Leu Leu Met Val Ala Leu Met Gly Arg
4796                1540                1545                1550
4798 Leu Gly Asp Pro Leu Thr Cys Arg Ser Thr
4799                1555                1560
4993 <210> SEQ ID NO: 34
4994 <211> LENGTH: 758
4995 <212> TYPE: PRT

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

4996 <213> ORGANISM: Musa acuminata

4998 <400> SEQUENCE: 34

4999 Ser Leu Val Arg Gly Pro Pro Arg Gly Arg Arg Tyr Arg Ala Leu Ile

5000 1 5 10 15

5002 Ser Ser Leu Asn Leu Ser Leu Ser Leu Ser Leu Ser Leu Tyr

5003 20 25 30

5005 Val Phe Lys Tyr Gly Cys Asn Ala Glu Leu Leu Cys Leu Ser Trp Pro

5006 35 40 45

5008 Asn Cys Val His Leu Ala Asp Lys Ser Gly Asp Asn Val Leu Phe Thr

5009 50 55 60

5011 Glu Ser Thr Ala Gly Gly Pro Glu Ile Thr Ser Asp Ala His Trp Val

5012 65 70 75 80

5014 Met Met Ile Trp Thr Pro Pro Gln Arg Ala Ala Met Gly Cys Glu Ile

5015 85 90 95

5017 His Ile Ala Ala Ile Arg Glu Ala Arg Asn Thr Arg Leu Leu Leu Phe

5018 100 105 110

5020 Gln Arg Ser Lys Gly Gln Ala Thr Val Thr Ile Asp Phe Phe Glu His

5021 115 120 125

5023 Asp Asp Asn Asp Asp Leu Leu Leu Gln Tyr Pro Ser Pro Thr Val Glu

5024 130 135 140

5026 Trp Glu Met Gly Leu Leu His Tyr Phe Ser Gln Glu Leu Ile Glu Ser

5027 145 150 155 160

5029 Pro Ala Asn Cys Cys Phe Ser Phe Leu Ile Leu Asn Leu Pro Pro Val

5030 165 170 175

5032 Thr Leu Lys Leu His Val Lys Thr Phe Leu Tyr Gly Ser Glu His Glu

5033 180 185 190

5035 Ile Tyr His Ser Asn Gly Asp Leu His Tyr His His His His Leu

5036 195 200 205

5038 His Gly Phe Gly Ser Asn Thr Glu Asn Leu Ile Asn Pro Thr Pro Ile

5039 210 215 220

5042 Leu Ala Leu Ala Pro Ser Pro Arg Lys Ile Gln Gln Glu Gln Gln Lys

5043 225 230 235 240

5045 Phe Arg Met His Ile Glu Leu Ile Trp Ser Leu Glu Asn His Gly Leu

5046 245 250 255

5048 Lys Ile Leu Lys Ile Asn His Asn His Leu Leu Thr Leu Thr Ile His

5049 260 265 270

5051 Ile Leu Ser Thr Lys Phe Asp Ile Gly Phe Leu Ile Ser Tyr Ile Arg

5052 275 280 285

5054 Phe Lys Ile Ser Pro Phe Asp Arg Ile Asn Ile Ser Phe Asn Ser Leu

5055 290 295 300

5057 Gly Lys Asp Leu Ile Tyr Ile Tyr Ile Tyr Ile Phe Ile Tyr Ile Leu

5058 305 310 315 320

5060 Thr Ile Ser Leu Thr Arg Ile Ile Asp Gly His Ile Cys Lys Asn Pro

5061 325 330 335

5063 Pro Ile Val His Ser Lys Arg Ser Leu Asn Gly Arg Asn Tyr Phe Ile

5064 340 345 350

5066 Ser Arg Asp Phe Gln Asn Ile Leu Val Ser Phe Thr Val Met Met Leu

5067 355 360 365

5069 Arg Met Ile Arg Trp Lys Asp Ala Cys Val Ser Arg Leu Arg Ser Leu

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

5070      370      375      380
5072 Trp Arg Gly Arg Asp Glu Asp Lys Asp Val Ser Gly Arg Tyr Gln Val
5073 385      390      395      400
5075 Phe Ser Ser Pro Thr Thr His Val Ser Asp Ser Arg Tyr Gly Leu Ser
5076      405      410      415
5078 Arg Trp Arg Val Asp Cys Thr Asp Glu Arg Val Asn Ala His Pro Pro
5079      420      425      430
5081 Ser Phe Ile Leu Ser Leu Cys Val Cys Glu Arg Ser Ala Tyr Lys Ala
5082      435      440      445
5084 Arg Asn Lys Pro Leu Phe Ser Pro Arg Thr His His Thr Ile His Thr
5085      450      455      460
5087 Leu His Pro Leu Leu Leu Arg Ala Phe Ser Pro Ser Phe Leu Val Pro
5088 465      470      475      480
5090 Cys Arg Pro Ala Ala Thr Ala Thr Ala Leu Thr Arg Ala Ser Ala Cys
5091      485      490      495
5093 Lys Ser Ser Ser Ile Pro Pro Pro Leu Leu Leu Leu Leu Leu Leu Leu
5094      500      505      510
5096 Leu Leu Thr Ser Pro Arg Leu Cys Leu Met Ser Arg Leu Phe Pro His
5097      515      520      525
5099 Arg Ser Ser Lys Leu Arg Ala Leu Leu Gly Asn Ile Ser Asn Thr Ile
5102      530      535      540
E--> 5104 Cys Ile Cys Xaa Arg Ser Thr Leu Ala Glu Glu Leu Gly Phe Ala Phe
5105 545      550      555      560
5107 Ala Gly Arg Lys Glu Thr Ala Thr Val Ser Ile Leu Leu Arg Pro Arg
5108      565      570      575
5110 Arg Gly Thr Asp Leu Leu Leu Pro Pro Arg Arg Gly Ser Asn Leu
5111      580      585      590
5113 Gly Leu His Leu Ile Thr Leu Pro Asn Ala Phe Ser Val Phe Val Ser
5114      595      600      605
5116 Ser Leu Gln Leu Arg Arg Arg Gly Asp Arg Cys Arg Arg Ser Cys Arg
5117      610      615      620
5119 Ala Arg Gln Val Gln Val Arg Arg Arg Leu Arg Leu His Arg Leu Gln
5120 625      630      635      640
5122 Val Trp Gln Leu Arg Ser Thr Cys Val Thr Thr Thr Lys Lys Phe Ala
5123      645      650      655
5125 Met His Lys Lys Gln Lys Asn Lys Lys Lys Lys Gly Arg Arg Arg Arg
5126      660      665      670
5128 Cys Tyr Val Leu Phe Gly Gln Ala Asp Arg Leu Asp Gly Ile Thr Gln
5129      675      680      685
5131 Tyr His Leu Cys Tyr Leu Cys Pro Val Leu Gln Leu Ser Tyr Leu Ser
5132      690      695      700
5134 Ser Met Lys Tyr Tyr Tyr Ser Gly Cys Val Ile His Ile Cys Cys Cys
5135 705      710      715      720
5137 Cys Cys Cys Phe Leu Phe His Gln Ser Thr Gln Arg Ile Asp Cys Thr
5138      725      730      735
5140 Val Arg Pro Asn Phe Leu Thr Asp Met Leu Ala Gln Leu Arg Met Asn
5141      740      745      750
5143 Ser Asn Gln Thr Ser Leu
5144      755

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

5147 <210> SEQ ID NO: 35
 5148 <211> LENGTH: 758
 5149 <212> TYPE: PRT
 5150 <213> ORGANISM: Musa acuminata
 5152 <400> SEQUENCE: 35

P35

5153 His Trp Tyr Gly Ala Pro Leu Glu Val Asp Gly Ile Asp Lys Leu Ser
 5154 1 5 10 15
 5156 Leu Leu Ser Ile Ser Leu Ser Leu Ser Leu Ser Leu Ser Leu Cys Met
 5157 20 25 30
 5159 Ser Leu Asn Met Val Val Met Leu Asn Cys Tyr Val Tyr Leu Gly Gln
 5162 35 40 45
 5164 Thr Val Ser Ile Phe Glu Gln Ile Asn Leu Ala Ile Met Phe Phe Leu
 5165 50 55 60
 5167 Leu Lys Ala Leu Gln Asp Glu Gly Leu Lys Ser His Arg Thr Pro Thr
 5168 65 70 75 80
 5170 Gly Ser Tyr Gly Leu Leu His Ser Glu Gln Pro Trp Asp Val Arg Ser
 5171 85 90 95
 5173 Thr Gln Arg Arg Gly Lys Pro Ala Thr Leu Gly Cys Cys Cys Ser Ser
 5174 100 105 110
 5176 Lys Asp Arg Lys Val Arg Arg Gln Arg Ser Thr Phe Ser Ser Met Met
 5177 115 120 125
 5179 Thr Thr Thr Thr Cys Ser Cys Asn Ile Arg Pro Leu Pro Ser Gly Asn
 5180 130 135 140
 5182 Lys Trp Val Cys Ser Cys Thr Ile Ser Arg Arg Asn Leu Lys Ala Leu
 5183 145 150 155 160
 5185 Gln Ile Ala Val Ser Leu Ser Leu Tyr Thr Phe Leu Leu Leu His Asn
 5186 165 170 175
 5188 Cys Met Leu Arg His Phe Cys Met Asp Pro Asn Met Arg Ser Ile Ile
 5189 180 185 190
 5191 Glu Val Met Gly Arg Ile Tyr Ile Ile Ile Ile Ile Ile Ser Met
 5192 195 200 205
 5194 Gly Leu Asp Leu Ile Arg Pro Lys Thr Ser Phe Lys Ile Gln Pro Gln
 5195 210 215 220
 5197 Tyr Trp Leu Asp Leu Leu His Leu Gln Glu Lys Tyr Asn Lys Asn Asn
 5198 225 230 235 240
 5200 Lys Asn Leu Gly Cys Thr Leu Asn Phe Gly His Tyr Glu Arg Ile Met
 5201 245 250 255
 5203 Asp Lys Tyr Asn Lys Lys Ile Ile Ile Ile Tyr Ser Leu Arg Phe Thr
 5204 260 265 270
 5206 Phe Tyr Pro Pro Asn Leu Thr Ser Ala Ser Asn Phe His Ile Leu Gly
 5207 275 280 285
 5209 Ser Lys Lys Ser Leu Pro Leu Thr Asp Glu Ile Phe Leu Leu Ile Arg
 5210 290 295 300
 5212 Gly Arg Ile Tyr Asn Ile Tyr Ile Tyr Ile Tyr Leu Phe Ile Arg Phe
 5213 305 310 315 320
 5215 Pro Phe Leu Ser Pro Glu Tyr Glu Ser Thr Ala Ile Ser Ala Lys Thr
 5216 325 330 335
 5218 His Gln Leu Phe Thr Val Asn Ala His Ile Lys Val Glu Ile Thr Phe
 5219 340 345 350

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

5222 Lys Phe Leu Glu Ile Ser Asn Lys Ile Tyr Ser Tyr Leu Leu Gln Cys
5223          355                      360                      365
5225 Ser Gly Asp Gly Arg Met Arg Val Ser Ala Ala Cys Asp Leu Cys Gly
5226          370                      375                      380
5228 Gly Asp Glu Thr Lys Thr Arg Thr Ala Asp Asp Thr Lys Ser Ser Pro
5229 385                      390                      395                      400
5231 Pro Pro Pro Arg Thr Ser Gln Ile Pro Asp Thr Ala Tyr Pro Gly Gly
5232          405                      410                      415
5234 Val Trp Thr Ala Gln Thr Asn Glu Met Pro Ile Pro Pro Leu Ser Phe
5235          420                      425                      430
5237 Phe Leu Phe Ala Cys Val Arg Gly Ala Pro Ile Asn Lys His Glu Thr
5238          435                      440                      445
5240 Ser Pro Phe Ser Leu Gln Glu His Thr Thr Pro Phe Thr His Tyr Ile
5241          450                      455                      460
5243 Leu Cys Phe Phe Glu Pro Phe Arg Leu Pro Ser Ser Ser Asn His Val
5244 465                      470                      475                      480
5246 Asp Leu Arg Gln Leu Arg Leu Arg Gln Glu Pro Val Arg Val Ser His
5247          485                      490                      495
5249 Pro Pro Ser Leu His Leu Phe Phe Phe Phe Phe Phe Phe Pro Arg
5250          500                      505                      510
5252 Pro Val Cys Val Val Asp Ser Ser His Ile Ala Arg Gln Asn Ser Glu
5253          515                      520                      525
E--> 5255 Leu Tyr Gly Thr Ser Ala Ile Leu Tyr Val Tyr Val Xaa Gly Gln Arg
5256          530                      535                      540
5258 Trp Leu Lys Asn Leu Val Leu Pro Leu Gln Glu Glu Arg Lys Gln Leu
5259 545                      550                      555                      560
5261 Arg Tyr Arg Tyr Cys Asp Arg Glu Glu Val Leu Ile Ser Phe Phe Ser
5262          565                      570                      575
5264 Leu Leu Leu Val Glu Asp Asp Gln Thr Asn Asp Tyr Thr Leu Leu Pro
5265          580                      585                      590
5267 Tyr Leu Met Leu Phe Pro Val Ser Phe Arg Leu Phe Ser Tyr Val Asp
5268          595                      600                      605
5270 Glu Val Ile Val Ala Ala Glu Ala Ala Glu His Asp Gly Lys Cys Lys
5271          610                      615                      620
5273 Cys Gly Ala Ala Cys Ala Cys Thr Asp Cys Lys Cys Gly Asn Glu Ala
5274 625                      630                      635                      640
5276 Leu Val Ser Leu Pro Leu Asn Asn Lys Ser Leu Gln Cys Ile Lys Asn
5277          645                      650                      655
5279 Lys Arg Thr Lys Lys Lys Lys Glu Glu Glu Gly Val Ala Met Tyr
5282          660                      665                      670
5284 Ser Asn Asn Ser Gly Arg Leu Ile Gly Cys Lys Met Gly Arg Ser Ile
5285          675                      680                      685
5287 Ile Cys Val Ile Ser Val Leu Cys Tyr Asn Ser Pro Ile Tyr Pro Ser
5288          690                      695                      700
5290 Gln Asn Ile Ile Ser Ile Asn Leu Val Val Ser Phe Ile Tyr Ala Ala
5291 705                      710                      715                      720
5293 Ala Ala Ala Ala Ser Ser Phe Thr Asn Gln Pro Lys Gly Ser Ile Ala
5294          725                      730                      735
5296 Leu Gly Pro Thr Ser Ser Pro Ile Cys Ser Leu Ser Tyr Asp Glu Thr

```

RAW SEQUENCE LISTING

DATE: 03/20/2003

PATENT APPLICATION: US/09/892,635

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

5297 740 745 750

5299 Ala Thr Lys Arg Val Cys

5300 755

5303 <210> SEQ ID NO: 36

5304 <211> LENGTH: 762

5305 <212> TYPE: PRT

5306 <213> ORGANISM: Musa acuminata

5308 <400> SEQUENCE: 36

5309 Leu Thr Gly Thr Gly Pro Pro Ser Arg Ser Thr Val Ser Ile Ser Phe

5310 1 5 10 15

5312 Asp Leu Phe Ser Gln Ser Leu Ser Leu Ser Leu Ser Leu Ser

5313 20 25 30

5315 Val Cys Leu Ile Trp Leu Cys Ile Ala Met Phe Ile Leu Ala Lys Leu

5316 35 40 45

5318 Cys Pro Ser Leu Ser Arg Ile Trp Arg Cys Ser Phe Tyr Lys His Cys

5319 50 55 60

5321 Arg Met Arg Ala Asn His Ile Gly Arg Pro Leu Gly His Asp Asp Met

5322 65 70 75 80

5324 Asp Ser Ser Thr Ala Ser Ser His Gly Met Asp Pro His Ser Ser Val

5325 85 90 95

5327 Asp Lys Gly Ser Pro Gln His Ala Val Val Val Pro Val Lys Ile Glu

5328 100 105 110

5330 Arg Ser Gly Asp Ser Asp Asp Arg Leu Phe Arg Ala Gln Arg Arg Pro

5331 115 120 125

5333 Ala Pro Ala Ile Ser Val Pro Tyr Arg Arg Val Gly Ile Asn Gly Phe

5334 130 135 140

5336 Val Val Ala Leu Phe Leu Ala Gly Ile Asn Lys Pro Cys Lys Leu Leu

5337 145 150 155 160

5339 Phe Leu Phe Pro Tyr Ile Lys Pro Ser Ser Cys Tyr Ile Lys Ile Ala

5342 165 170 175

5344 Cys Asp Ile Ser Val Trp Ile Arg Thr Asp Leu Ser Leu Lys Trp Val

5345 180 185 190

5347 Gly Phe Thr Leu Ser Ser Ser Ser Ser Ser Pro Trp Val Trp Ile Leu

5348 195 200 205

5350 Asp Arg Lys Pro His Leu Lys Ser Asn Pro Asn Ile Gly Leu Thr Cys

5351 210 215 220

5353 Ser Ile Ser Lys Lys Asn Thr Thr Arg Thr Thr Lys Ile Asp Ala His

5354 225 230 235 240

5356 Ile Asp Leu Val Thr Met Arg Glu Ser Trp Ile Lys Asn Ile Lys Ile

5357 245 250 255

5359 Lys Asn Lys Ser Ser Ser Thr His Ser Asn Asp Ser His Ser Ile His

5360 260 265 270

5362 Gln Ile His Arg Leu Leu Ile Asn Phe Ile Tyr Val Leu Lys Asn Leu

5363 275 280 285

5365 Ser Leu Gln Met Asn Lys Tyr Phe Phe Phe Val Arg Glu Gly Ser Asn

5366 290 295 300

5368 Ile Ile Tyr Ile Tyr Ile Tyr Ile Tyr Leu Leu Asp Ser Asn His Phe

5369 305 310 315 320

5371 Ser His Gln Asn Met Asn Arg Arg Pro Tyr Leu Gln Lys Pro Thr Asn

P.37

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
 TIME: 11:22:24

Input Set : A:\pto.amc.txt
 Output Set: N:\CRF4\03202003\I892635.raw

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5372          325          330          335
5374 Cys Ser Gln Thr Leu Ile Glu Leu Arg Ser Lys Leu Leu Leu Asn Phe
5375          340          345          350
5377 Arg Phe Pro Ile Lys Tyr Thr Arg Ile Phe Tyr Ser Asp Asp Ala Pro
5378          355          360          365
5380 Asp Asp Lys Met Glu Gly Cys Val Cys Gln Pro Pro Ala Ile Ser Val
5381          370          375          380
5383 Ala Gly Thr Arg Arg Arg Gln Gly Arg Glu Arg Thr Ile Pro Ser Leu
5384 385          390          395          400
5386 Leu Leu Pro His His Ala Arg Leu Arg Phe Pro Ile Arg Pro Ile Pro
5387          405          410          415
5389 Val Ala Cys Gly Leu His Arg Arg Thr Ser Lys Cys Pro Ser Pro Leu
5390          420          425          430
5392 Phe His Ser Phe Ser Leu Arg Val Glu Glu Arg Leu Ile Ser Thr Lys
5393          435          440          445
5395 Gln Ala Pro Phe Leu Ser Lys Asn Thr Pro His His Ser His Thr Thr
5396          450          455          460
5398 Ser Ser Ala Ser Ser Ser Leu Phe Ala Phe Leu Pro Arg Leu Thr Met
5399 465          470          475          480
5402 Ser Thr Cys Gly Asn Cys Asp Cys Val Asp Lys Ser Gln Cys Val Val
5403          485          490          495
5405 Ile Leu His Pro Ser Thr Ser Ser Ser Ser Ser Ser Ser Ser Ser
5406          500          505          510
5408 Asn Leu Ala Pro Phe Val Phe Asp Glu Ser Thr Leu Pro Thr Ser Leu
5409          515          520          525
5411 Val Lys Thr Gln Ser Phe Ile Arg Glu His Gln Gln Tyr Tyr Met Tyr
5412          530          535          540
E--> 5414 Met Xaa Lys Val Asn Val Gly Arg Thr Trp Phe Cys Leu Cys Arg Lys
5415 545          550          555          560
5417 Lys Gly Asn Ser Tyr Gly Ile Asp Ile Val Glu Thr Glu Lys Arg Tyr
5418          565          570          575
5420 Leu Ala Ser Ser Pro Ser Ser Ser Ser Arg Met Ile Lys Leu Ile Arg
5421          580          585          590
5423 Ile Thr Pro Tyr Tyr Leu Thr Cys Phe Phe Arg Ile Arg Phe Val Ser
5424          595          600          605
5426 Ser Ala Thr Ser Thr Arg Ser Leu Pro Gln Lys Leu Pro Ser Met Thr
5427          610          615          620
5429 Ala Ser Ala Ser Ala Ala Pro Pro Ala Pro Ala Pro Thr Ala Ser Val
5430 625          630          635          640
5432 Ala Thr Glu Lys His Leu Cys His Tyr His Ile Lys Val Cys Asn Ala
5433          645          650          655
5435 Lys Thr Lys Glu Gln Lys Lys Lys Arg Lys Lys Lys Lys Val Trp Leu
5436          660          665          670
5438 Cys Thr Leu Ile Ile Arg Ala Gly Val Val Arg Trp Asp Asn Ala Val
5439          675          680          685
5441 Ser Ser Val Leu Ser Leu Ser Cys Val Thr Thr Leu Leu Ser Ile Leu
5442          690          695          700
5444 Val Asn Glu Ile Leu Leu Val Leu Ile Trp Leu Cys His Ser Tyr Met
5445 705          710          715          720

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

5447 Leu Leu Leu Leu Leu Leu Pro Leu Ser Pro Ile Asn Pro Lys Asp Arg
 5448 725 730 735
 5450 Leu His Cys Lys Ala Gln Leu Pro His Arg Tyr Ala Arg Ser Val Thr
 5451 740 745 750
 5453 Met Asn Glu Gln Gln Pro Asn Glu Ser Ala
 5454 755 760
 5617 <210> SEQ ID NO: 39
 5618 <211> LENGTH: 597
 5619 <212> TYPE: PRT
 5620 <213> ORGANISM: Musa acuminata
 5622 <400> SEQUENCE: 39
 5623 Ser Leu Val Arg Gly Pro Pro Arg Gly Arg Arg Tyr Arg Ala Leu Ile
 5624 1 5 10 15
 5626 Ser Ser Leu Asn Leu Ser Leu Ser Leu Ser Leu Ser Leu Tyr
 5627 20 25 30
 5629 Phe Lys Tyr Gly Cys Asn Ala Glu Leu Leu Cys Leu Ser Trp Pro Asn
 5630 35 40 45
 5632 Cys Val His Leu Ala Asp Lys Ser Gly Asp Asn Val Leu Phe Thr Glu
 5633 50 55 60
 5635 Ser Thr Ala Gly Gly Pro Glu Ile Thr Ser Asp Ala His Trp Val Met
 5636 65 70 75 80
 5638 Met Ile Trp Thr Pro Pro Gln Arg Ala Ala Met Gly Cys Glu Ile His
 5639 85 90 95
 5642 Ala Ala Ile Arg Glu Ala Arg Asn Thr Arg Leu Leu Leu Phe Gln Arg
 5643 100 105 110
 5645 Ser Lys Gly Gln Ala Thr Val Thr Ile Asp Phe Phe Glu His Asp Asp
 5646 115 120 125
 5648 Asn Asp Asp Leu Leu Leu Gln Tyr Pro Ser Pro Thr Val Glu Trp Glu
 5649 130 135 140
 5651 Met Gly Leu Leu His Tyr Phe Ser Gln Glu Leu Ile Glu Ser Pro Ala
 5652 145 150 155 160
 5654 Asn Cys Cys Phe Ser Phe Leu Ile Leu Asn Leu Pro Pro Val Thr Leu
 5655 165 170 175
 5657 Lys Leu His Val Lys Thr Phe Leu Tyr Gly Ser Glu His Glu Ile Tyr
 5658 180 185 190
 5660 His Ser Asn Gly Asp Leu His Tyr His His His His His Leu His Gly
 5661 195 200 205
 5663 Phe Gly Ser Asn Thr Glu Asn Leu Ile Asn Pro Thr Ile Leu Ala Leu
 5664 210 215 220
 5666 Ala Pro Ser Pro Arg Lys Ile Gln Gln Glu Gln Gln Lys Phe Arg Met
 5667 225 230 235 240
 5669 His Ile Glu Leu Ile Trp Ser Leu Glu Asn His Gly Leu Lys Ile Leu
 5670 245 250 255
 5672 Lys Lys Ile Asn His Asn His Leu Leu Thr Leu Thr Ile His Ile Leu
 5673 260 265 270
 5675 Ser Thr Lys Phe Asp Ile Gly Phe Leu Ile Ser Tyr Ile Arg Phe Lys
 5676 275 280 285
 5678 Ile Ser Pro Phe Asp Arg Ile Asn Ile Ser Phe Asn Ser Leu Gly Lys
 5679 290 295 300

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

5681 Asp Leu Ile Tyr Ile Tyr Ile Tyr Ile Phe Ile Tyr Ile Leu Thr Ile
5682 305 310 315 320
5684 Ser Leu Thr Arg Ile Ile Asp Gly His Ile Cys Lys Asn Pro Pro Ile
5685 325 330 335
5687 Val His Ser Lys Arg Ser Leu Asn Gly Arg Asn Tyr Phe Ile Ser Arg
5688 340 345 350
5690 Asp Phe Gln Asn Ile Leu Val Ser Phe Thr Val Met Met Leu Arg Met
5691 355 360 365
5693 Ile Arg Trp Lys Asp Ala Cys Val Ser Arg Leu Arg Ser Leu Trp Arg
5694 370 375 380
5696 Gly Arg Asp Glu Asp Lys Asp Val Ser Gly Arg Tyr Gln Val Phe Ser
5697 385 390 395 400
5699 Ser Pro Thr Thr His Val Ser Asp Ser Arg Tyr Gly Leu Ser Arg Trp
5702 405 410 415
5704 Arg Val Asp Cys Thr Asp Glu Arg Val Asn Ala His Pro Pro Ser Phe
5705 420 425 430
5707 Ile Leu Ser Leu Cys Val Cys Glu Arg Ser Ala Tyr Lys Ala Arg Asn
5708 435 440 445
5710 Lys Pro Leu Phe Ser Pro Arg Thr His His Thr Ile His Thr Leu His
5711 450 455 460
5713 Pro Leu Leu Leu Arg Ala Phe Ser Pro Ser Phe Leu Val Pro Cys Arg
5714 465 470 475 480
5716 Pro Ala Ala Thr Ala Thr Ala Leu Thr Arg Ala Ser Ala Cys Lys Ser
5717 485 490 495
5719 Ser Ser Ile Pro Pro Pro Leu Leu Leu Leu Leu Leu Leu Leu
5720 500 505 510
5722 Thr Ser Pro Arg Leu Cys Leu Met Ser Arg Leu Phe Pro His Arg Ser
5723 515 520 525
5725 Ser Lys Leu Arg Ala Leu Leu Gly Asn Ile Ser Asn Thr Ile Cys Ile
5726 530 535 540
E--> 5728 Cys Xaa Arg Ser Thr Leu Ala Glu Glu Leu Gly Phe Ala Phe Ala Gly
5729 545 550 555 560
E--> 5731 Arg Xaa Glu Thr Ala Thr Val Ser Ile Leu Leu Xaa Pro Lys Xaa Gly
5732 565 570 575
E--> 5734 Thr Asp Xaa Leu Leu Leu Pro Pro Pro Arg Arg Xaa Ser Asn Leu Gly
5735 580 585 590
E--> 5737 Leu Xaa Leu Ile Thr
5738 595
5741 <210> SEQ ID NO: 40
5742 <211> LENGTH: 590
5743 <212> TYPE: PRT
5744 <213> ORGANISM: Musa acuminata
5746 <400> SEQUENCE: 40
5747 His Trp Tyr Gly Ala Pro Leu Glu Val Asp Gly Ile Asp Lys Leu Ser
5748 1 5 10 15
5750 Leu Leu Ser Ile Ser Leu Ser Leu Ser Leu Ser Leu Ser Leu Cys Met
5751 20 25 30
5753 Ser Leu Asn Met Val Val Met Leu Asn Cys Tyr Val Tyr Leu Gly Gln
5754 35 40 45

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

```

5756 Thr Val Ser Ile Phe Glu Gln Ile Asn Leu Ala Ile Met Phe Phe Leu
5757      50                      55                      60
5759 Leu Lys Ala Leu Gln Asp Glu Gly Leu Lys Ser His Arg Thr Pro Thr
5762 65                      70                      75                      80
5764 Gly Ser Tyr Gly Leu Leu His Ser Glu Gln Pro Trp Asp Val Arg Ser
5765                      85                      90                      95
5767 Thr Gln Arg Arg Gly Lys Pro Ala Thr Leu Gly Cys Cys Cys Ser Ser
5768                      100                      105                      110
5770 Lys Asp Arg Lys Val Arg Arg Gln Arg Ser Thr Phe Ser Ser Met Met
5771                      115                      120                      125
5773 Thr Thr Thr Thr Cys Ser Cys Asn Ile Arg Pro Leu Pro Ser Gly Asn
5774      130                      135                      140
5776 Lys Trp Val Cys Ser Cys Thr Ile Ser Arg Arg Asn Leu Lys Ala Leu
5777 145                      150                      155                      160
5779 Gln Ile Ala Val Ser Leu Ser Leu Tyr Thr Phe Leu Leu Leu His Asn
5780                      165                      170                      175
5782 Cys Met Leu Arg His Phe Cys Met Asp Pro Asn Met Arg Ser Ile Ile
5783                      180                      185                      190
5785 Glu Val Met Gly Arg Ile Tyr Ile Ile Ile Ile Ile Ile Ile Ser Met
5786                      195                      200                      205
5788 Gly Leu Asp Leu Ile Arg Pro Lys Thr Ser Phe Lys Ile Gln Pro Tyr
5789      210                      215                      220
5791 Trp Leu Asp Leu Leu His Leu Gln Glu Lys Tyr Asn Lys Asn Asn Lys
5792 225                      230                      235                      240
5794 Asn Leu Gly Cys Thr Leu Asn Phe Gly His Tyr Glu Arg Ile Asp Lys
5795                      245                      250                      255
5797 Tyr Asn Lys Lys Ile Ile Ile Ile Tyr Ser Leu Arg Phe Thr Phe Tyr
5798                      260                      265                      270
5800 Pro Pro Asn Leu Thr Ser Ala Ser Asn Phe His Ile Leu Gly Ser Lys
5801      275                      280                      285
5803 Lys Ser Leu Pro Leu Thr Asp Glu Ile Phe Leu Leu Ile Arg Gly Arg
5804      290                      295                      300
5806 Ile Tyr Asn Ile Tyr Ile Tyr Ile Tyr Leu Phe Ile Arg Phe Pro Phe
5807 305                      310                      315                      320
5809 Leu Ser Pro Glu Tyr Glu Ser Thr Ala Ile Ser Ala Lys Thr His Gln
5810                      325                      330                      335
5812 Leu Phe Thr Val Asn Ala His Ile Lys Val Glu Ile Thr Phe Lys Phe
5813                      340                      345                      350
5815 Leu Glu Ile Ser Asn Lys Ile Tyr Ser Tyr Leu Leu Gln Cys Ser Gly
5816      355                      360                      365
5818 Asp Gly Arg Met Arg Val Ser Ala Ala Cys Asp Leu Cys Gly Gly Asp
5819      370                      375                      380
5822 Glu Thr Lys Thr Arg Thr Ala Asp Asp Thr Lys Ser Ser Pro Pro Pro
5823 385                      390                      395                      400
5825 Pro Arg Thr Ser Gln Ile Pro Asp Thr Ala Tyr Pro Gly Gly Val Trp
5826                      405                      410                      415
5828 Thr Ala Gln Thr Asn Glu Met Pro Ile Pro Pro Leu Ser Phe Phe Leu
5829                      420                      425                      430
5831 Phe Ala Cys Val Arg Gly Ala Pro Ile Asn Lys His Glu Thr Ser Pro

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

5832 435 440 445
5834 Phe Ser Leu Gln Glu His Thr Thr Pro Phe Thr His Tyr Ile Leu Cys
5835 450 455 460
5837 Phe Phe Glu Pro Phe Arg Leu Pro Ser Ser Ser Asn His Val Asp Leu
5838 465 470 475 480
5840 Arg Gln Leu Arg Leu Arg Gln Glu Pro Val Arg Val Ser His Pro Pro
5841 485 490 495
5843 Ser Leu His Leu Phe Phe Phe Phe Phe Phe Phe Phe Pro Arg Pro
5844 500 505 510
5846 Val Cys Val Val Asp Ser Ser His Ile Arg Ala Gln Asn Ser Glu Leu
5847 515 520 525
E--> 5849 Tyr Gly Thr Ser Ala Ile Leu Tyr Val Tyr Val Xaa Gly Gln Arg Trp
5850 530 535 540
E--> 5852 Leu Lys Asn Leu Val Leu Pro Leu Gln Glu Glu Xaa Lys Gln Leu Xaa
5853 545 550 555 560
E--> 5855 Tyr Xaa Tyr Cys Xaa Arg Lys Xaa Val Leu Ile Xaa Phe Phe Ser Leu
5856 565 570 575
E--> 5858 Leu Leu Val Xaa Asp Asp Gln Thr Asn Asp Tyr Xaa Leu Leu
5859 580 585 590
6073 <210> SEQ ID NO: 45
6074 <211> LENGTH: 2160
6075 <212> TYPE: DNA
6076 <213> ORGANISM: Musa acuminata
6078 <220> FEATURE:
6079 <221> NAME/KEY: misc_feature
6080 <222> LOCATION: (511)
6081 <223> OTHER INFORMATION: Nucleotide 511 is "s" wherein "s" = c or g.
6083 <220> FEATURE:
6084 <221> NAME/KEY: misc_feature
6085 <222> LOCATION: (883)
6086 <223> OTHER INFORMATION: Nucleotide 883 is "n" wherein "n" = a, c, g, or t.
6088 <400> SEQUENCE: 45
6089 ggatcccaac ttttaggaat ggatcttaaa atttttagtta taagttcaaa gttagaaaaa 60
6091 tctttaccac gagctttgag tccattgatg acatccgtga aacggtgtac atgtctccga 120
6093 tggactcact tggtttcatt cggaaaagtt cgaaagagtg cataagaata ttgatttttg 180
6095 attctttcac tcggttggtg ccttcatgag tgacctcaag agtcctccaa atatcaaaag 240
6097 ccgaatcaca aattgaaatg tgattgaatt catttttgtc taatgcacaa aacagggtcat 300
6099 tcatagcctt tgtgttttaa gcaaaaacat tcttctccga ttcattcccat tcgctcatcg 360
6101 gaagagaaaa tttttgaaat ccattttcga caatagacca aagctcgaaa tccatgcatg 420
6103 gaaatgagga agatcctcat atgagttttc caatacatgt aattcgactc attaaacata 480
6105 ggtggatgtg taatgaaatg accctcatgc sctatctctc ttgggtatta aaccaaatat 540
6107 gagagtgagc cttgctctga taccaattgt taggatcaga gtggcactaa gagagggggg 600
6109 gagtgaatta gtgcagtgga ttaaaactta taagtttaaa aatgaattcg taaatacgag 660
6111 aagatttcgt ttttaagta acttgagtag atgaaaacca aaagttaaca gtagtgtaaa 720
6113 taacaatttc gggaaagtaa gaactcacac attcaaggaa cataccaatt taaagtgggt 780
6115 cggtcaaaat gacctacatc cacttggtga gccttcttcg aagaggctcc caactccac 840
OK-> 6117 tagcaaatca ctttgaaggg gaaggacaaa tacctctctt acnacctttt acaatgggtc 900
6119 atactcttac aaattttcaa cgagaaagaa ggaggtgaac atgcaagcaa ttgaaaacaa 960
6122 gacttgctaa agactttgct aaggcttttt ttctcaatct attgcttctc aaaagttgta 1020

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:24

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

6124	ttctctgctg	agaattgagg	ggtatttata	gaccccaaga	ggattttaa	ttgggctcca	1080
6126	aatttcgaat	gctcttgagg	tcccgagggt	gccgggtgcca	ccgcctgtca	gtgtttgaca	1140
6128	ctggacagt	tactagcgg	gccaccgccg	gacctctcgg	gtgttgggcg	gtgccaccgc	1200
6130	ctagactttt	tcagctca	ggttgga	caaacttgac	caaaccagt	ccgaactcgg	1260
6132	gtccaattga	cccgtaac	gattatagga	ttaaccctta	atcctaacc	taattatatg	1320
6134	caaactacgc	aactgaaa	atagtcctaa	gcaagttttt	aaccggcaaa	cgtcgagtct	1380
6136	tcttcggcg	atctttcgg	agacttctga	tatacctttg	gatttcttct	agcggactcc	1440
6138	tagtagggc	ccgatctgt	ggcgagttta	gcgagtagcc	gaaccttctc	ggtgatctcc	1500
6140	gcaaaccgcc	gatgatctct	tcggcagact	ttcgaaaact	tcgacaagtc	cccgatttct	1560
6142	tctcggttg	ttccgacagc	atctctaacg	aaacttcgga	ctccttgaat	gtccatcgaa	1620
6144	cttgactccg	gtaggcttgc	tttataat	caggctatca	tagttaatcc	tacatactta	1680
6146	actcaataat	atggattaga	ttaattaacc	catcaattga	tttcatcatc	aaaattcgac	1740
6148	attcaacaaa	catccgtact	caataaccca	tcaggctata	gttacgtgac	tatctactgt	1800
6150	gatccgtacg	tgaagttagc	gagtcatgat	ccaggtcgtg	tcacttattg	gccgaacacg	1860
6152	tatcccttat	ccaaatccag	tcttctcaac	tcttctagcc	taccgtctc	tttttttatt	1920
6154	acttttgaaa	gaattcaaat	caaaacagat	acaaaataac	acgggtgagac	actgtgacat	1980
6156	gctagtctct	ggaaagcatt	aattcgcgca	tccacagacg	tcgtcagctt	catcaccac	2040
6158	tttttcctac	ataccatgtc	gcatggcttt	gttgatgaca	gaccaccaca	agcttgctt	2100
6160	tggttctgcc	taacagagag	agagagagag	acagaccgat	agcctctca	ttcaccatgg	2160

E--> 6165

- 101 -

*delete**see p. 43 for more errors**FSI →*

Use of n and/or Xaa has been detected in the Sequence Listing.
 Review the Sequence Listing to insure a corresponding
 explanation is presented in the <220> to <223> fields of
 each sequence using n or Xaa.

09/812,635 43

<210> 42
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

← delete

<400> 42
gacgccatg gtgaatg

17

↓
The types of errors shown exist throughout
the Sequence Listing. Please check subsequent
sequences for similar errors.

VARIABLE LOCATION SUMMARY

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:25

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

Use of n's or Xaa's (NEW RULES):

Use of n's and/or Xaa's have been detected in the Sequence Listing.

Use of <220> to <223> is MANDATORY if n's or Xaa's are present.

in <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.

Seq#:9; N Pos. 163,387,471
Seq#:22; N Pos. 82,601,628,640,655,692,725,774,793,806,813,854,867,870,876
Seq#:22; N Pos. 882,890,919,946,959,965,995,999,1002,1028,1043,1054,1075
Seq#:22; N Pos. 1093,1515,2166,2216,2265,2345,2533,2870,2917,3077,3337,3356
Seq#:22; N Pos. 3618,3627,3754,3810,3819,3884,3893,4494,4503,4524,4533,4568
Seq#:22; N Pos. 4574,4597,4654,4724,4741,4759,4852,5027,5253,5546,5565,5567
Seq#:22; N Pos. 5575,5578,5618,5619,5650,5669,5672,5677,5683,5694,5704,5708
Seq#:22; N Pos. 5732,5741,5754,5758,5772,5778,5780,5784,5788,5802,5804,5808
Seq#:22; N Pos. 5813,5820,5824,5832,5834,5836,5854,5858,5863,5872,5875,5889
Seq#:22; N Pos. 5915,5922,5950,5990,6006,6011,6344,6401,6416,6596,6600,6608
Seq#:22; N Pos. 6612,6712,6748,6753,6756,6762,6830,6844,6847,6863,6910,6965
Seq#:22; N Pos. 6968,7070,7116,7179,7291,7322,7325,7345,7351,7359,7387,7395
Seq#:23; N Pos. 82,601,628,640,655,692,725,774,793,806,813,854,867,870,876
Seq#:23; N Pos. 882,890,919,946,959,965,995,999,1002,1028,1043,1054,1075
Seq#:23; N Pos. 1093,1515,2166,2216,2265,2345,2533,2870,2917,3077,3337,3356
Seq#:23; N Pos. 3618,3627,3754,3810,3819,3884,3893,4494,4503,4524,4533,4568
Seq#:23; N Pos. 4574,4597,4654,4724,4741,4759,4852,5027,5253,5546,5565,5567
Seq#:23; N Pos. 5575,5578,5618,5619,5650,5669,5672,5677,5683,5694,5704,5708
Seq#:23; N Pos. 5732,5741,5754,5758,5772,5778,5780,5784,5788,5802,5804,5808
Seq#:23; N Pos. 5813,5820,5824,5832,5834,5836,5854,5858,5863,5872,5875,5889
Seq#:23; N Pos. 5915,5922,5950,5990,6006,6011,6344,6401,6416,6596,6600,6608
Seq#:23; N Pos. 6612,6712,6748,6753,6756,6762,6830,6844,6847,6863,6910,6965
Seq#:23; N Pos. 6968,7070,7116,7179,7291,7322,7325,7345,7351,7359,7387,7395
Seq#:24; Xaa Pos. 25,164,173,177,181,193,204,220,227,231,233,247,251,254
Seq#:24; Xaa Pos. 259,269,278,282,284,294,296,305,310,314,320,326,458,656
Seq#:24; Xaa Pos. 673,687,713,774,883,899,952,1038,1043,1163,1180,1183,1202
Seq#:24; Xaa Pos. 1204,1397,1400,1412,1414,1422,1441,1462,1468,1474,1504
Seq#:24; Xaa Pos. 1559,1729,1735,1736,1739,1740,1753,1764,1770,1771,1773
Seq#:24; Xaa Pos. 1775,1778,1782,1783,1791,1794,1800,1806,1807,1808,1810
Seq#:24; Xaa Pos. 1815,1818,1822,1825,1826,1832,1833,1835,1837,1838,1842
Seq#:24; Xaa Pos. 1851,1863,1876,1881,1883,1991,2009,2014,2071,2075,2109
Seq#:24; Xaa Pos. 2120,2121,2122,2124,2147,2151,2152,2157,2169,2187,2188
Seq#:24; Xaa Pos. 2221,2236,2257,2293,2303,2304,2310,2312,2323
Seq#:25; Xaa Pos. 27,160,169,173,190,200,216,222,227,229,243,247,248,250
Seq#:25; Xaa Pos. 252,255,273,278,280,290,291,292,301,306,459,654,669,685
Seq#:25; Xaa Pos. 710,767,878,893,944,1029,1104,1107,1162,1164,1182,1185
Seq#:25; Xaa Pos. 1372,1375,1379,1382,1393,1395,1417,1440,1445,1450,1475
Seq#:25; Xaa Pos. 1533,1666,1672,1673,1676,1690,1706,1707,1714,1719,1727
Seq#:25; Xaa Pos. 1730,1734,1740,1742,1743,1744,1750,1751,1752,1754,1756
Seq#:25; Xaa Pos. 1757,1760,1761,1769,1770,1773,1779,1788,1790,1799,1813
Seq#:25; Xaa Pos. 1818,1820,1930,1949,1954,2011,2012,2015,2016,2058,2060
Seq#:25; Xaa Pos. 2061,2063,2083,2087,2088,2092,2106,2122,2123,2156,2171
Seq#:25; Xaa Pos. 2191,2224,2235,2236,2247,2258

VARIABLE LOCATION SUMMARY

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:25

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

Seq#:26; Xaa Pos. 23,196,205,209,214,226,254,260,264,267,284,285,287,289
Seq#:26; Xaa Pos. 301,309,313,315,327,328,345,352,358,494,697,713,728,813
Seq#:26; Xaa Pos. 939,991,1076,1081,1165,1167,1208,1226,1229,1250,1253,1442
Seq#:26; Xaa Pos. 1445,1452,1455,1465,1474,1492,1511,1517,1523,1549,1604
Seq#:26; Xaa Pos. 1676,1770,1777,1780,1781,1794,1795,1805,1812,1814,1816
Seq#:26; Xaa Pos. 1820,1823,1832,1835,1840,1841,1846,1847,1849,1850,1855
Seq#:26; Xaa Pos. 1857,1861,1862,1864,1865,1871,1872,1874,1877,1878,1883
Seq#:26; Xaa Pos. 1894,1903,1916,1922,1923,2034,2053,2058,2114,2118,2144

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003

TIME: 11:22:25

Input Set : A:\pto.amc.txt

Output Set: N:\CRF4\03202003\I892635.raw

L:13 M:270 C: Current Application Number differs, Replaced Application Number
 L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date
 L:357 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:120
 M:341 Repeated in SeqNo=9
 L:1562 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:60
 M:341 Repeated in SeqNo=22
 L:1880 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:60
 M:341 Repeated in SeqNo=23
 L:2144 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:24
 M:340 Repeated in SeqNo=24
 L:2601 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:25
 M:340 Repeated in SeqNo=25
 L:3045 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:26
 M:340 Repeated in SeqNo=26
 L:3542 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:840
 M:341 Repeated in SeqNo=27
 L:3726 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:840
 M:341 Repeated in SeqNo=28
 L:4100 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:29
 M:340 Repeated in SeqNo=29
 L:4216 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:30
 M:340 Repeated in SeqNo=30
 L:4531 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:31
 M:340 Repeated in SeqNo=31
 L:4872 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:1680
 L:4966 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:1680
 L:5104 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:34
 L:5255 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:35
 L:5414 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:36
 L:5528 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:1680
 M:341 Repeated in SeqNo=37
 L:5608 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:1680
 M:341 Repeated in SeqNo=38
 L:5728 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:39
 M:340 Repeated in SeqNo=39
 L:5849 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:40
 M:340 Repeated in SeqNo=40
 L:5973 M:283 W: Missing Blank Line separator, <220> field identifier
 L:6026 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44 after pos.:840
 L:6117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45 after pos.:840
 L:6165 M:254 E: No. of Bases conflict, this line has no nucleotides.